



First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

The Aeroplane in War—Real and Otherwise. The past week has provided us with several very significant object-lessons in the use of aerial craft in war. At home the course of the Naval Manoeuvres has demonstrated that the hydro-aeroplane—or, to give it its new official designation, the seaplane—has a value which can scarcely be exaggerated in the eyes of a commander-in-chief. It is true that very little in the way of official information as to the results of the manœuvres has been allowed to transpire, and very rightly; while the details which have reached the ears of the public have been of the most meagre description. This much, however, there is no harm in mentioning—that aircraft have been made use of to an extent hitherto undreamed of in the conduct of naval operations, and that they have been on the whole a success. The detection and capture of one of Admiral Jellicoe's submarines through the agency of a hydro-aeroplane, with almost similar experiences off Hunstanton and on the north and south coasts, have quite a dramatic interest of their own. These deadly under-water craft appear to have had matters very much their own way during the mimic war in the North Sea. Moving

with their conning towers only just awash, they are most difficult craft to detect from the deck of a hostile vessel, while submerged detection is an actual impossibility unless from an aeroplane or airship. Therefore, if the only record of usefulness were that the aeroplane is a sure detector of the presence of the submarine, it must be held to justify its application to the purposes of naval war; but that its sphere is thus restricted it would be foolish to suggest. It is true that nothing has been divulged as to the scouting value of aircraft, and the whole scheme of the manœuvres being confidential we do not suppose for a moment that the Admiralty will take us into its confidence, but we cannot think that all the work we know to have been done by naval aircraft during the operations has been of a purely negative value. However, in the absence of definite information, we can only watch carefully for the indications as afforded by the future attitude of the Admiralty in regard to its aircraft.

Passing from the mimic warfare to the real, news has come during the week of the first success of aircraft in war at sea. According to Central News and Reuter cables from America, the Mexican gunboat "Tampico" has been destroyed by a bomb dropped from an insurgent aeroplane while lying at anchor in the harbour of Guaymas. It is said that the aviator was M. Didier Masson, a Frenchman, and that the warship was blown up at the fourth attempt. At the time of writing, the report is unconfirmed, and it is only fair to say that it does not find credence among naval experts. A prominent American naval authority, Capt. Gleaves, commandant of the New York Navy Yard, refuses to credit the report, and likens the difficulty of dropping an aerial bomb upon a vessel to a man standing at the top of the Eiffel tower and trying to drop an apple into a hat. If the aviator is prepared to take great risks, he says, and come within easy range for the purpose of securing accuracy of aim, he was immediately exposed to rifle-fire, which would either maim or kill the aviator, and certainly riddle his aeroplane.

In different words we have heard all this before; and without any attempt to dogmatize upon technical propositions which are outside our scope, we are much more inclined to credit the report of the successful destruction of the "Tampico" than to agree with the views of the American naval expert. It is at least as probable that the bomb-dropping aviator should have found such a relatively large target as even a small gunboat, as that

the crew of the latter should succeed in bringing him down by rifle-fire. Everyone who has had any experience of active service knows how wildly inaccurate rifle-fire is apt to be when ranges are unknown and men are labouring under excitement and the stress of action. Admitting that under these circumstances the percentage of hits scored on targets which alter their position and range very slowly is small, the difficulties are manifestly increased very greatly when the target is a man in an aeroplane, moving at anything up to, say, 70 miles an hour, even though he may have come low enough to make his own aim fairly accurate. To disable man or machine would require an exceedingly lucky shot. It might be done, but the odds are on the aviator under such circumstances as would attend the blowing up of such a vessel as the "Tampico." That is not to argue that in the battle of aeroplane *versus* the warship the same would always be the case. There are many different factors to be taken into account. Fire-discipline is one of the most important, and this we do not imagine to be a quality in which the Mexican seamen excel, and, therefore, an aviator might be justified in taking chances which would be simple suicide if the objective were, say, a British vessel. But these are technical considerations for the military expert to pronounce upon.

Whatever the facts may turn out to be, there is a real significance in the report itself. Here we have a categorical statement that for the first time in history a warship has been destroyed by an aeroplane, and in front of its confirmation or denial we see the naval authorities of the world gravely discussing, not its possibility, which is fairly admitted, but merely the reliability of the news! And when we think that it is but yesterday that these same authorities scouted the whole possibility of human flight, it makes it all seem very wonderful.

• • •

**Aviation
Agreement
between
France and
Germany.**

Arising out of the recent Luneville incident, when a German military airship alighted in French territory, an Identic Note has just been exchanged between the French and German Governments, constituting an agreement whereby the conditions governing the navigation of the air within their respective territories are defined. The tenor of this important Note is as follows:—

"All the aircraft belonging to the private citizens of each of the

parties to the Note shall have the right to fly above the territories of the two countries. The passengers shall carry with them papers establishing their identity and nationality. In addition, the pilot must be in possession of proof that he is a properly qualified pilot. Each of the Governments shall have the right to impose restrictions on aerial navigation over its territory, and, in particular, to interdict flying over certain districts in the interests of the security of the State. These special restrictions shall be communicated by the one Government to the other concerned.

" Military aviators shall not cross the frontiers of either country without the express permission of the Government interested. Pilots of such aircraft shall take every precaution possible against crossing the frontiers. Should it happen that aircraft are driven by *force majeure* across the frontier, they shall at once descend, and hospitality shall not be refused. The nearest military authorities will take steps to ascertain that the pilot is a properly authorised Government officer, and that he has really been driven across the frontier through circumstances over which he had no control. As soon as this has been ascertained to be the case the aircraft shall be at once released. During the stay of such aircraft it shall have the character of extra-territoriality."

This is really a most important agreement, since it sets at rest the question of the right of international navigation of the air by private aviators, so far as the two contracting nations are concerned. Up to the moment the right has hardly been questioned, and aviators have crossed land and sea frontiers more or less on sufferance, and without knowing their exact rights—if any. The agreement under review, apart from this important phase, also creates a most valuable precedent for use against the time, now fast approaching, when the international law of the air has to be codified.



Our Service Aircraft.

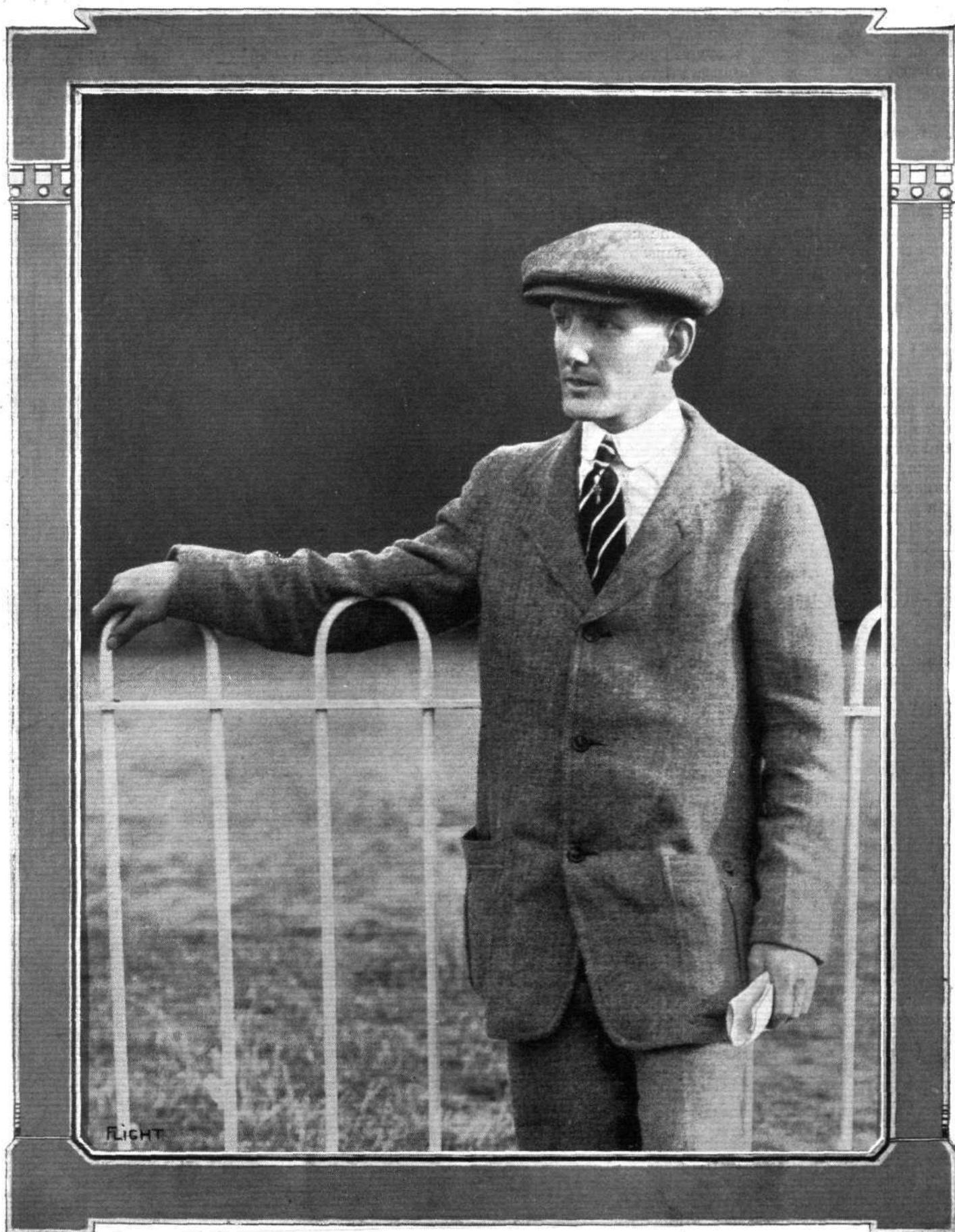
THE discussion in the Commons on Wednesday anent the serviceable aircraft of the Army should indeed bring Members of Parliament to their senses, so that they insist upon no longer being fooled by the Government through Col. Seely as a mouth-piece. Anything more shameful in the way of political juggling, when the safety of the Empire is at stake, can hardly be conceived. Whatever beneficial measures

in other directions the present Government may claim to have brought in, the disclosures resulting from the visit to the various aircraft stations of Mr. Joynson-Hicks and Mr. Sandys should be more than sufficient indictment to over-ride their good work, and end their rule with the ignominy it deserves. In regard to the damning majority of 33, the words of the once popular song, "What do you think of the Irish now?" may well form a party cry for both Government and Opposition, with varied intonation according to their sides.



The beautiful 100-guinea Trophy presented to the Royal Aero Club by Sir Thos. Lipton, for a hydro-aeroplane race at Cowes, on Wednesday, August 6th. The Trophy has been made by Messrs. Mosley, Flowers and Co.

MEN OF MOMENT IN THE WORLD OF FLIGHT.
Pilot-Instructors.



MR. SYDNEY PICKLES.

MR. SYDNEY PICKLES.

PILOT INSTRUCTOR.

DURING the year that he has been qualified as an aeroplane pilot, the subject of our portrait this week has built up a high reputation for sane and sound flying. To many of his friends it will doubtless seem incredible that it is but a year since Pickles secured his ticket, but his certificate, as a matter of fact, bears date July 30th, 1912. Leaving Sydney in February of last year, Pickles enjoyed a few months' holiday in the old country before joining the Bristol school on Salisbury Plain in June. He then settled down to tackle the flying business very seriously, and so being in no hurry to qualify for his *brevet*, learnt to manipulate the various types of Bristol machines, both monoplane and biplane. Then, on account of Lark Hill being required for the military machine competition, the Bristol Salisbury Plain school was transferred to Brooklands, and it was there, as a matter of fact, that Pickles qualified on a biplane.

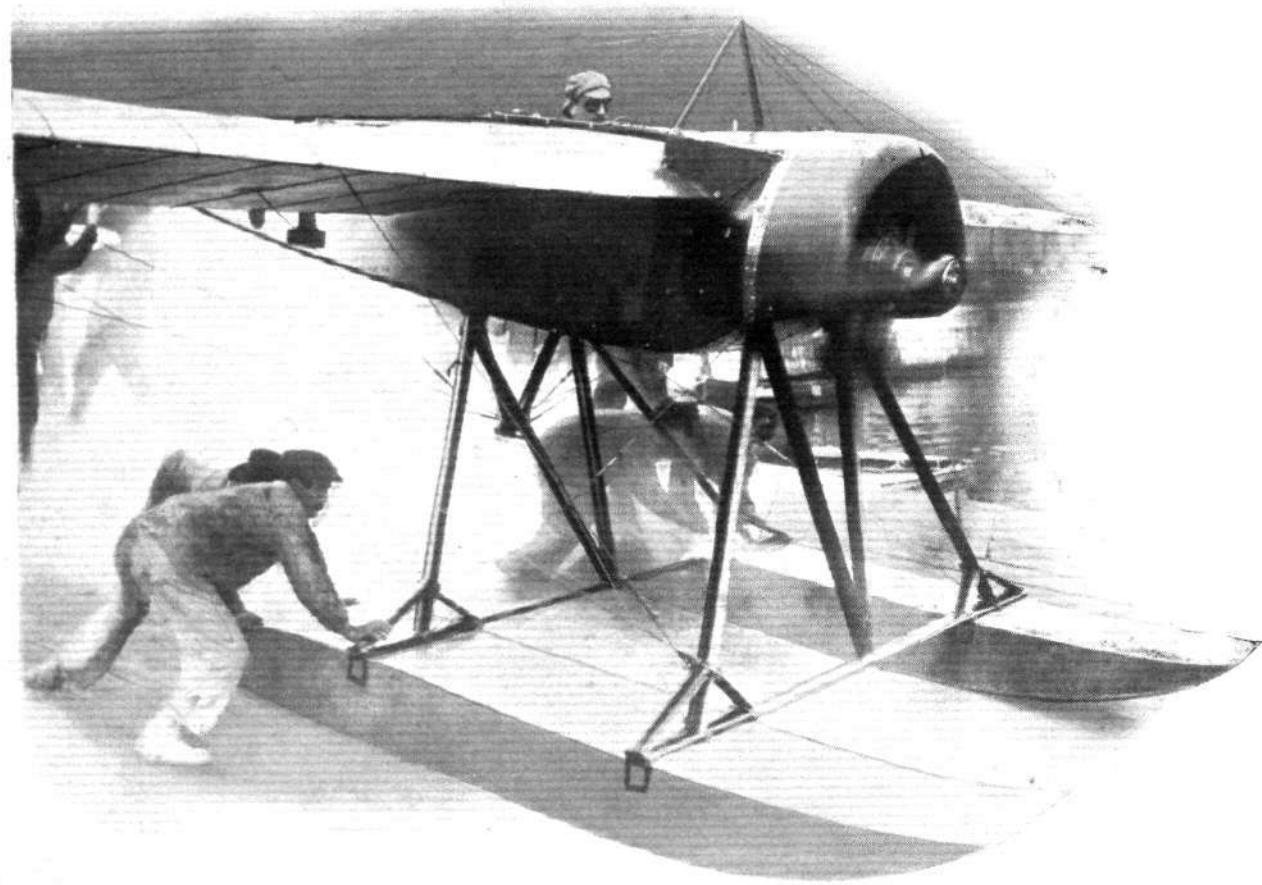
Some time later, he joined the W. H. Ewen school at Hendon as pilot instructor, and started off by getting six pupils through their certificate tests within six weeks. He also piloted the Caudron monoplane which had been flown over from France by Mr. W. H. Ewen, and which everyone fought shy of, on account of its speed. On this machine Pickles went over to Brooklands in the record time of $12\frac{1}{2}$ mins. and returned in 17 mins. Subsequently he did quite a deal of flying on the Handley Page monoplane. On one occasion he started with a passenger for Brooklands, but after taking 35 mins.

to get to Harrow Hill, came to the conclusion that his supply of petrol would hardly last out a trip to Weybridge at that speed, and so turned back to Hendon. With the wind behind it was a different tale, something like 100 m.p.h. being the speed. Another trip on the Handley Page was to Winchester and back. Pickles is also familiar with the handling of both the Grahame-White and Farman biplanes, whilst recently he has put a number of Short machines through their official tests. On his own Blériot with 60 h.p. Anzani motor, he has given exhibition flights in various parts of the country, and had the honour of flying before the King at Newcastle-under-Lyme.

Pickles' two crossings of the English Channel are well within the memory of our readers, and they will also remember the splendid exhibition of flying after dark which he gave at one of the night meetings at Hendon last year. A few weeks back he was at Issy, and was invited to try a monoplane, with peculiarly designed wings, which had been built by a Roumanian gentleman, M. Gramatescue. This machine, which was fitted with a 60 h.p. Anzani motor, made several short flights, greatly to the delight of the inventor, who had previously been unable to induce other pilots to do more than taxi the machine across the ground.

Pickles is one of the few British pilots holding a superior *brevet*, his being numbered 8.

"THE HAWK."



RESTRAINING AN AERIAL SEA MONSTER.—The Morane-Saulnier just getting away for the water.

THE CAUDRON HYDRO-BIPLANE.

THE advantages of having aeroplanes capable of starting from, and alighting on, land or water with equal facility are too obvious to need enlarging upon, and aeroplane designers at home and abroad are constantly at work endeavouring to devise a machine capable of carrying out either manœuvre. There may be said to have been three general types of chassis construction developed for the

of the three types will survive ultimately, but the success of the Caudron hydro-biplane serves to show the good qualities of the third system.

In its general appearance this machine resembles the land machines of the same make—with which our readers are already familiar through descriptions in *FLIGHT*—except, of course, for such alterations as have been



Three-quarter front view of the Caudron hydro-biplane.

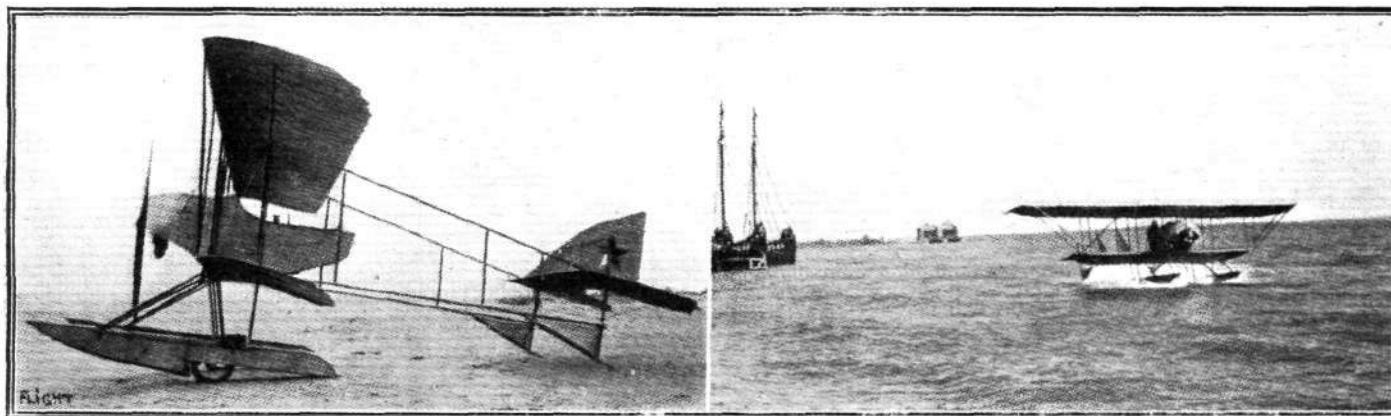
purpose of making the machines amphibious. The first type has "disappearing" wheels—that is to say, it has wheels which can be raised clear of the water when the machine is resting on that element; while, if it is desired to alight on land, the wheels can again be lowered so as to bring them below the level of the floats. In the second type—which has, perhaps, not been developed quite as much—the reverse procedure is followed, the floats, instead of the wheels, being raised and lowered.

In the third type, to which belongs the Caudron hydro-biplane of which we publish illustrations this week,

necessitated by the purpose for which the machines are built.

Most notable among the innovations is naturally the chassis, which has been modified in order to accommodate floats as well as wheels. A very good idea of the arrangement of this structure may be gained from an examination of the accompanying scale-drawings and sketches. The floats, which are of the single-step type, are placed widely apart, thus making the machine very stable for taxiing on the water.

A rectangular opening is provided in the centre of each

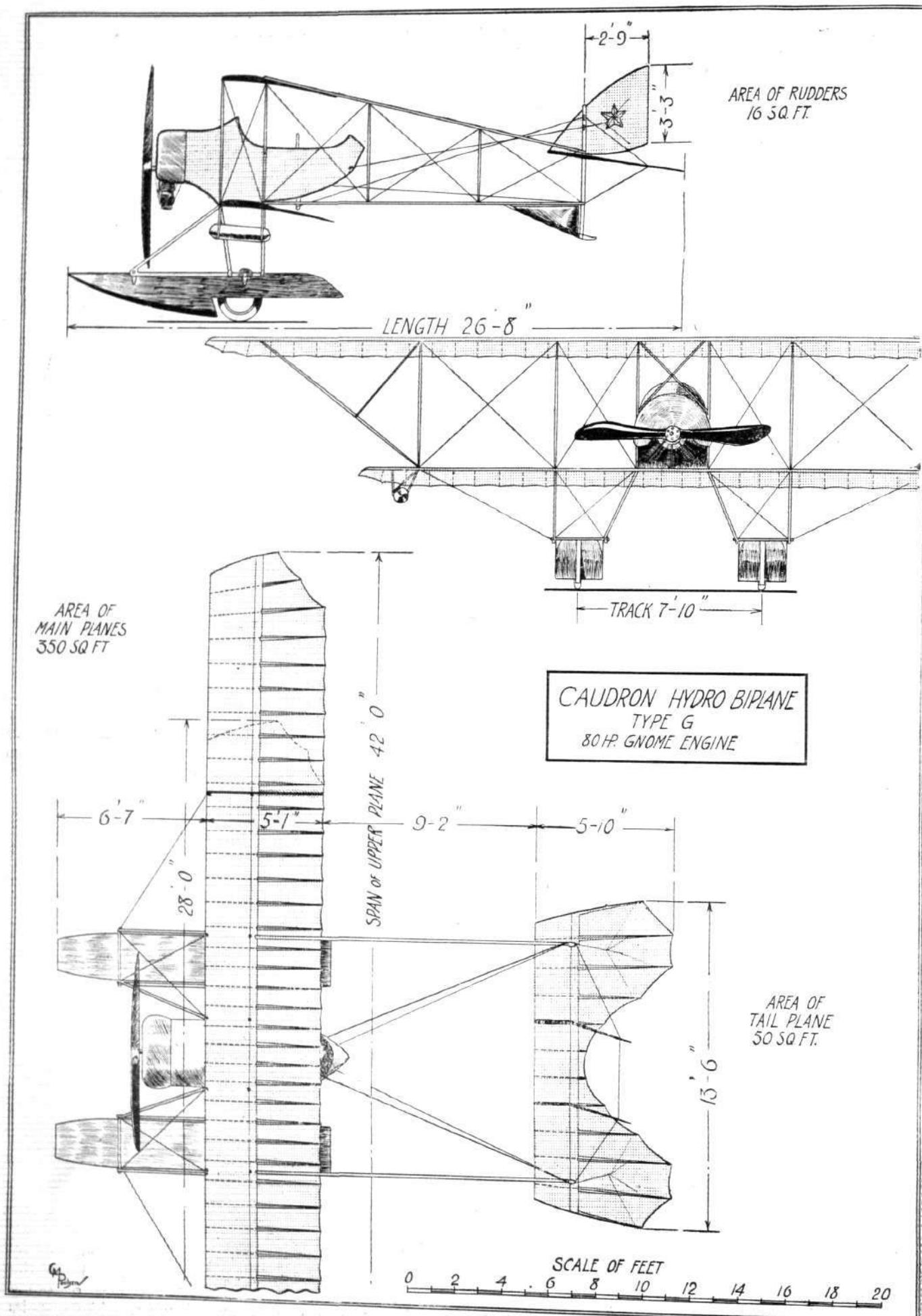


On left side, view of Caudron hydro., and on right the machine is just getting off.

neither wheels nor floats are made to "disappear," but are so arranged relatively to one another that the lower part of the wheels projects far enough below the bottom of the floats to permit of running along the ground without the floats touching, while when the machine is afloat the wheels are partially submerged.

It is yet early days to venture an opinion as to which

float for the accommodation of the wheels. These are not, as might have been expected, sprung from the float, but attached rigidly thereto, springing being effected by means of shock absorbers interposed between the floats and the chassis skids. The method of doing this is shown in one of our sketches. Three pairs of chassis struts carry at their lower extremities

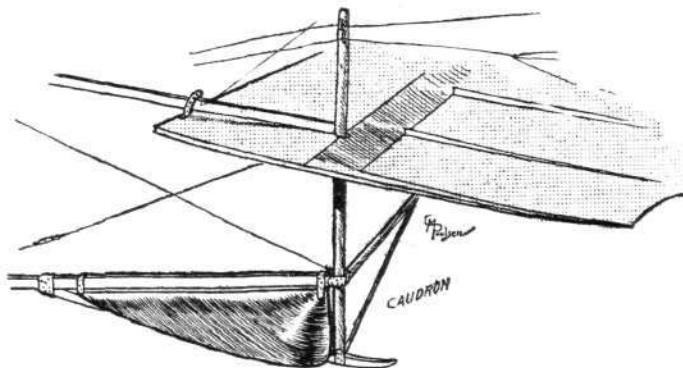


CAUDRON HYDRO-BIPLANE.—Plan, side and front elevation to scale.

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two skids placed sufficiently wide apart to allow the float to move between them. A steel tube connecting the forward ends of the skids to which it is fastened runs across the top of the float. Two steel clips bolted to the sides of the float serve as bearings, allowing the float to swivel round the tube. About half-way between the two rear pairs of struts, and secured to the float by steel clips, is a similar tube, the ends of which, however, pass *over* the skids from which it is sprung by means of rubber shock absorbers. It will thus be seen that the forward tube serves as a pivot for the float, whilst the rear tube acts as an anchorage for the shock-absorber. This construction provides springing of the undercarriage, whether the machine is used on land or water, so that in any case the shock of alighting is greatly minimised.

The main planes are of exactly similar construction to those on the land machines, having the same flexible trailing edge which has proved so successful. The boat-shaped body in which are the seats of the pilot and observer, arranged tandem fashion, carries on overhung bearings in the nose an 80 h.p. Gnome engine, driving directly a propeller of 8 ft. diameter. Control is by means of the usual Caudron central lever, a footbar operating the twin rudders. The tail outrigger differs from that of the land machines, in that the two lower tail booms



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One of the tail floats.

are attached to the rear spar of the lower main plane instead of being continued forward to form the skids.

Like the rudders, the tail plane, which is fluxed for



THE ROYAL FLYING CORPS.

The following appointments were announced in the *London Gazette* of the 25th ult. :-

R.F.C.—Military Wing.—*Special Reserve of Officers.*—The undermentioned to be Second Lieutenants (on probation). Dated July 26th, 1913: William Lawrence Hardman and Arthur Payze.

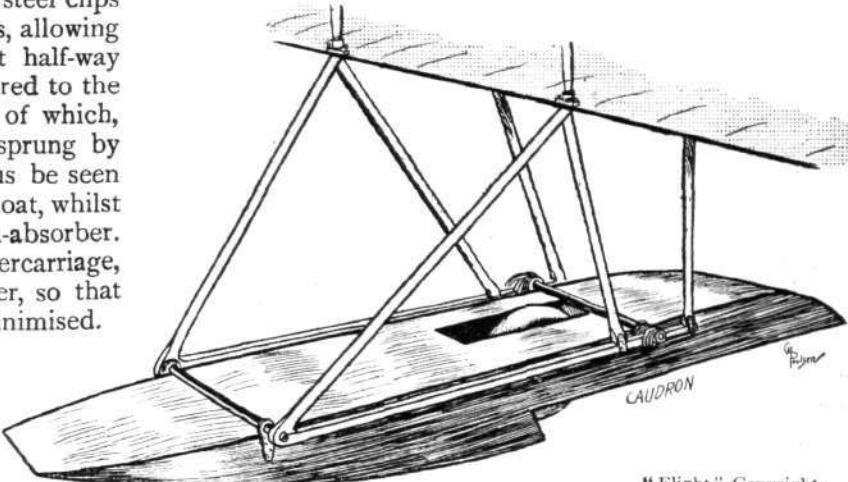
WAR OFFICE Summary of work done by the Military Wing for week ending July 25th:—

No. 1 Squadron, Farnborough.—Kiting took place on several days in the week, several useful experiments being carried out. The old "Beta" car and envelope were put together and some preliminary flights made.

No. 2 Squadron, Montrose.—Work was carried out in connection with the Manoeuvres at Ayr by the B.E. Flight under Captain Becke. Flying was also carried on by the flight at Montrose.

No. 3 Squadron, Netheravon.—On the 17th, 18th, 19th, 21st, 22nd, 23rd, and 24th a considerable amount of flying took place on B.E.'s, Avros, and Henry Farmans. On the 22nd, Lieut. Wadham, flying an Avro, shut off his engine at 10,000 ft., and landed with a spiral *vol plané* a few yards in front of his shed. The Detach-

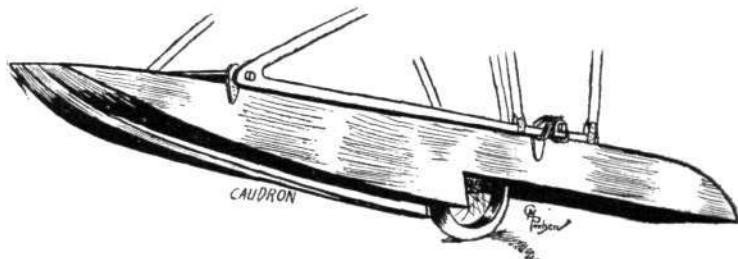
elevation and descent, and warped in conjunction with the main planes, is similar to those on the land machines of the latest type. Two floats of rather



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Sketch of one of the main floats, showing method of springing.

unusual design support the weight of the tail when the machine is resting on the water, and two small cylindrical floats are provided on the top of the lower main plane to protect the wing tips from contact with the water. These machines have been quite successful in France, where a large number have been sold to the Government, and the British Admiralty have bought several of them from the W. H. Ewen Aviation Co., Ltd.,



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View from underneath of main float, showing the protective keel.

who hold the sole rights for Great Britain and Colonies. A machine of this type is now in course of construction at the Clapham works of Messrs. Hewlett and Blondeau.



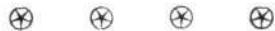
THE ROYAL FLYING CORPS.

ment at Lydd were flying daily, carrying out observation and direction of artillery fire.

No. 4 Squadron, Netheravon.—The Officer, N.C.O., and A.M. Pilots of this squadron were flying daily throughout the week with the exception of Wednesday, and carried out reconnaissance flights on B.E.'s, and Maurice Farmans.

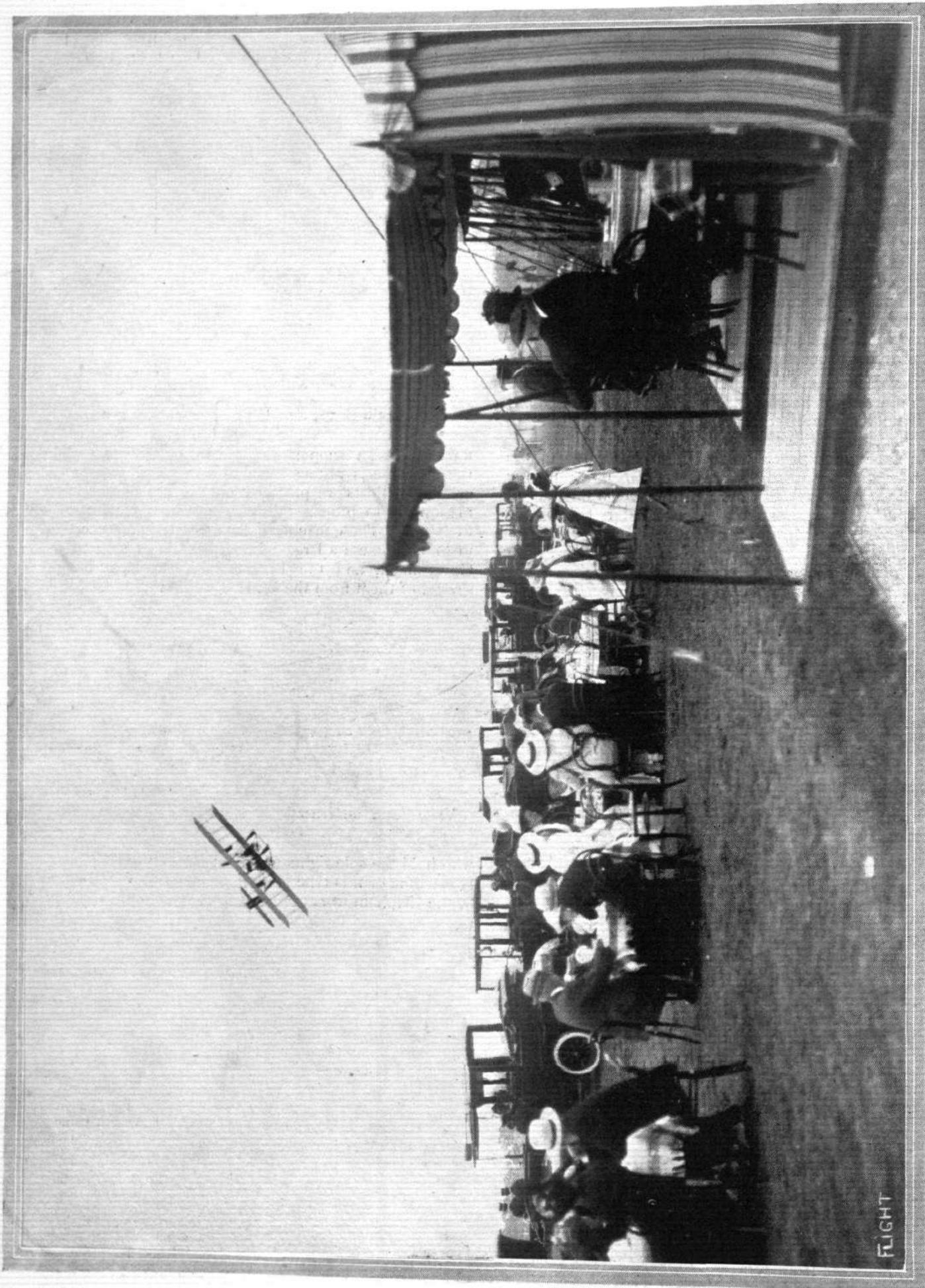
Flying Depot, Farnborough.—Besides the experimental work a considerable amount of reconnaissance was carried out in conjunction with the operations of the 1st and 2nd Divisions.

General News.—The Royal Flying Corps won the Challenge Cup at the Army Athletic Meeting last week, for the unit gaining most points in the various events. Lieuts. Chinnery, Atkinson and Anderson, and Sergt. Kesler were those chiefly responsible for this success.



The Russian National Subscription.

DURING the month of May the subscriptions to the National Fund for Russian military aviation received by the Grand Duke Michael Alexandrovitch amounted to £1,487, while up to the end of May the total amount received since the opening of the fund was £79,026.



FLIGHT

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TEA AT HENDON AERODROME WHILST WATCHING THE FLYING.—In the air is Beatty descending on his Wright machine.

OVER THE CHANNEL WITH MY SON.

By LILLIE PICKLES (Mrs. M. Pickles, of Australia).

MONDAY, July 21st, 1913, was indeed a wonderful day for me. On the previous evening, in response to a telegram from my son, I had left London, post haste, for Boulogne, in order that I might fly back with him the next day on a waterplane. Imagine, if you can, the intensity of my thoughts, which chased one another out of mind by their rapidity of inception, while the boat was making its way on that clear, moonlight night from Folkestone to Boulogne. Anticipation mingled with reminiscence, and while one minute I was wondering what it would be like to be up in the air over the sea, the next I was recalling incidents and escapades of my boy's career. One of those memories was a day soon after a new 40 h.p. S.P.A. had arrived, when, on answering the telephone, I was told by some kind friend that my boy, who was then but twelve years old, had been seen driving that big car all by himself along the Military Road near Sydney. Cars of 40 h.p. of that period were not quite the docile vehicles they are to-day, and yet he managed it all-right. Then I thought of another time when he persuaded me to accompany him in our motor boat. At first it was delightful going about in the fairly quiet water near Manby, but this was hardly satisfying to him. He wanted a little more movement and suggested that we should steer up Sydney Harbour to Mosman's Bay. I consented, as I must confess that I am a kindred soul with my son, where daring is concerned. We started, but while crossing Sydney Heads a sudden storm came up, and there we were, tossing about like a cork on the water, but my boy sat there and kept that boat's head on to every wave, as cool and as calm as though we were on a mill pond, instead of expecting a watery grave every moment. Without hesitation the assistance of a pilot boat was declined, and at last we reached the smooth waters of Mosman's Bay none the worse for our adventure, and secretly I was glad. Had I not been given a glimpse of the strength and courage of my son? So it went on from year to year, but I must not weary you with these tales of the past, or I shall not have space to tell of my wonderful flight.

On the Monday morning, after seeing some friends off by the boat, we were quickly at the hangar making ready. The machine was one of the new water-planes which had been brought along the coast from Crotoy by Rene Caudron a few days previously. After spending about half an hour in going over the machine, to make sure that everything was in order, my son and I climbed into our seats. I think, without a doubt, this

was the proudest moment of my life. But there was little time for sentiment. In a moment the propeller was buzzing away merrily, and, with a wave of the hand to the kindly French folk who had come to wish us *bon voyage*, we started for England. Up—up we climbed into the sky like a huge bird, and with one last glance at France—which was spread out beneath us like a beautiful picture, with its long beaches and green hills studded with quaint old buildings—we turned out over the Channel, not bothering to hug the coast to Cape Grisnez as is usually done. Gradually we found our range of vision being closed in until, after flying for some fifteen minutes, we could see nothing except for a glimpse of the water immediately beneath us. By the aid of the compass, however, and with an occasional anxious look at another instrument, which my son said was an altimeter, we were able to keep going, and five minutes later the monotony was varied by the dim outline of a steamer coming towards us. This my son recognised as the outward-bound steamer for Boulogne, and a minute or so later we caught up the inward-bound boat, which had our friends on board, making its way to Folkestone. Planing down a little we spiraled round the boat, and just as the circuit was completed the engine became fractious, and slowed up by some fifty revolutions per minute. No amount of coaxing would induce it to run at its proper speed, but instead, the indicator slowly but surely crept back until it stood at only 900 r.p.m. The "white cliffs of Old Albion" were, however, well in sight by this time, and my son, without hesitation, brought the machine down to the surface of the sea, and stopped the engine. He happened to have some spare sparking plugs and

a spanner in his pocket, and so he climbed out on to the front float, and while the machine bobbed about in the choppy sea, he cleaned every one of the sparking plugs in the 9-cylinder 100 h.p. Gnome engine. To his satisfaction he found that the last one to be attended to was cracked, and naturally felt that he had located the seat of the trouble. The plug replaced, Sydney climbed back into his seat, but on starting up the engine found, to his disgust, that it was in no better mood than before, and so he accepted the situation and resolved to "taxi" the remainder of the distance to Folkestone—about five miles. Our little craft was buffeted about in a most extraordinary manner, and, to crown everything, the steamer by this time had caught us up and passed on, satisfied that our acknowledgment of our friends' greetings denoted that we were



Mrs. M. Pickles.

happy and comfortable. To such a pass has water-planing already arrived! We enjoyed (!) their backwash, which sent our wing tips dipping beneath the water alternately. Steady down once more, we continued to skim over the sea like a gigantic water fowl, and although I have had many exciting times both in motor car and motor boat in Australia, none equalled the exciting, although withal, enjoyable thrills which we experienced on our hundred horse power waterplane. In but a short time we were at Folkestone, the machine answering her "helm" beautifully as we steered round into the harbour and there made her secure, in time to get ashore and see our friends off to London. After the

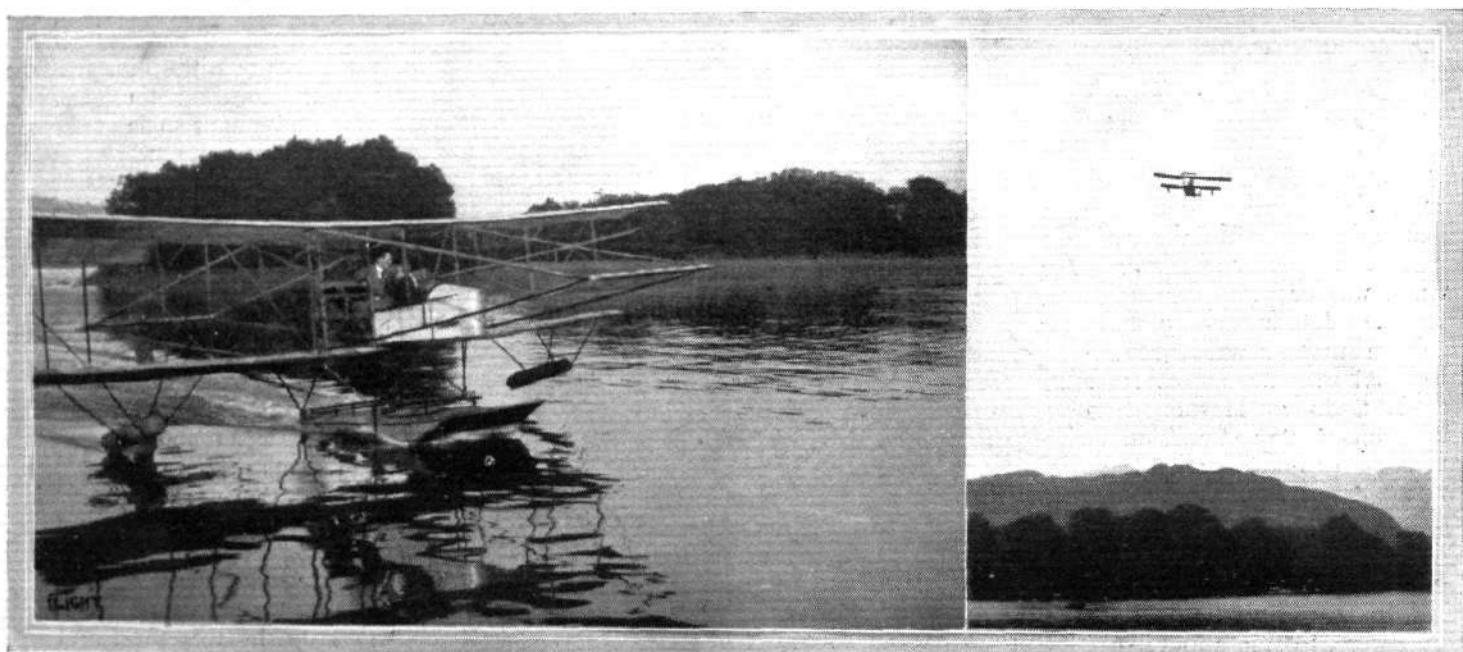
necessary arrangements had been made for the care of the machine, and the securing of mechanics to put the engine right, I boarded the London train, a tired but very happy woman. It isn't given to many mothers to fly with their own son, and the memory of my experience will be with me for all time. Truly Sydney has fulfilled the promise of his youth.

By way of a climax, it is now my one great desire to learn to fly, and I hardly anticipate any great difficulty as I have been driving motor cars for nine years. In fact, I was the first lady to drive in Australia, and so it is perhaps a pardonable aspiration which I have to be the first Australian lady aviator.

WATER FLIGHTS AT WINDERMERE.

MR. STANLEY ADAMS is giving visitors to Windermere this year a very great deal of additional enjoyment by his able flying of the "Waterhen" and the more recently built tractor biplane that was described in FLIGHT the other week. Those anxious to enjoy passenger flights over the lake are numerous, and business on a fine day is brisk; besides, Mr. Adams is a cautious pilot, and gives

Last Saturday Mr. Adams did good service in the enthusiasm he aroused among members of the automobile industry in Lancashire and district who had come down at the invitation of Sir Kenneth and Lady Crossley to enjoy the afternoon at Pull Woods. When the "Waterhen" appeared, all other interests were forgotten, and the booking for flights ultimately kept the steamer waiting at the pier



With the Lancashire Branch of the Society of Motor Manufacturers and Traders at Lake Windermere.—On the left Sir Kenneth Crossley just taking his seat in the "Waterhen" as a passenger, and on the right in flight over Lake Windermere.

confidence to the spectator. The surroundings of Windermere are beautiful to the eye, but from the pilot's point of view they often have an ominous look, for awkward eddies are not infrequent, and the more ideal the day from the visitor's standpoint the less sometimes is the air in a good state for flying.

head for a quarter of an hour or more while the last on the list made his trip aloft.

How long, we wonder, before the private air yacht daily spreads its wings in graceful flight above the lake? A silent engine and no castor oil would do more than most things to bring it to pass.

WIRELESS TELEGRAPHY.

AN increasing amount of attention is being paid by scientific amateurs to wireless telegraphy, and it is a subject that might appropriately be more studied by those similarly interested in flight. It is not a very difficult hobby, nor is it an expensive one. From a list we have before us, issued by Markes and Co., of Para House, Derby, who are well-known makers of wireless apparatus for amateurs, a 1,000-mile range receiving set can be purchased for £5 or so. The necessary instruments are four in number, and include a Bassano detector, a condenser, an oscillation transformer, and a pair of telephones.

They are intended, however, for use with a fixed aerial of about 100 ft. span, and 60 ft. high, but it is suggested that on an aeroplane a Fleming Valve might probably be more reliable than a "Bassano" mineral detector.

Much may be heard by an amateur with a 1,000-mile set. The chief

stations in Norway, Denmark, Germany, and France are, of course, heard nearly every day. Pola (in the Adriatic) and Madrid are also particularly loud, and occasionally Soller (Balearic Islands), Oran and Bizerta (in Algeria) may be heard. All these have different notes, and are generally recognisable by their "voice" as well as by their call-letters.

In "wireless" work arrangements must be made for two "capacities" and inductance, and they generally consist of long strands of wire. One of these may consist of the stays on an aeroplane frame, and for the other a wire hanging down may suffice. In view, however, of the possibility of its becoming entangled in the propeller, an arrangement of wires from the planes to the tail is probably preferable. Sometimes two long wires are used, wound in or out on revolving drums. Tuning can be accomplished by having a spring brass contact pressing on the back of each spool.

FLYING AT HENDON.

THE second floral fête was held at Hendon on Thursday of last week with considerable success, and it only remains for the public to enter into the fun of the thing with a little more vim to make these shows a permanent amusement. The weather conditions on this last occasion were somewhat better, and some good racing was put up, although a strong wind made it very trying for the pilots. A procession of decorated cars had been arranged to start from Marble Arch and proceed to the Aerodrome, but, unfortunately, this was unavoidably cancelled at the last moment. A goodly number of decorated cars put in an appearance at the Aerodrome, nevertheless.

They were arranged in two classes, Class I being for the best decorated private car and Class II for the best decorated trade car. The first prize in Class I was awarded to a Rochet-Schneider belonging to Dr. Moock, of Garuda propeller fame. The car was very tastefully decorated with white lilies, tiger lilies, and rambler roses, while a miniature Garuda propeller was mounted on the radiator. The second prize went to a Star car entered by the Women's Aerial League, the decoration scheme being carried out in sweet peas and cornflowers. Mrs. Stocks, not satisfied at being a pilot, has taken up aeroplane construction, and exhibited the first example of her work—a Farman-type biplane—on her Flanders car, for which she was awarded third prize. In Class II the first prize went to a Napier delivery van belonging to Tudor Brothers which was decorated with red roses, the name of the firm being fashioned in flowers. Second prize was awarded to a Selfridge delivery van which was literally smothered in roses. The Thermos Company received

just before the end of the last lap. Turner and Beatty had a hard fight for second place, which went to the former by a bare 7 secs. Unfortunately Lewis Turner damaged his landing chassis in landing, and was so prevented from competing in the final. Trouble was also experienced with Brock's propeller, which made another vacancy in the final. Those who started in the latter, therefore, were Manton, Beatty, Verrier, and Lieut. Porte on the 75 h.p. Deperdussin. This heat resulted in an exciting finish, the first three coming in very close together. These were Porte, first (13 mins. 24 secs.); Beatty, second (13 mins. 29 secs.); and Verrier, third (13 mins. 41 secs.). Manton again had great difficulty in following the course, his time being 14 mins. 18 secs. After the Speed Handicap, Claude Grahame-White brought out the Morane-Saulnier, and started off for a cross-country flight. The Lord Mayor of London, who had been a spectator of the racing, then presented the prizes for the various events of the day, after which he made a short speech, in which he expressed his appreciation of the encouragement to aviation that was being given by the Grahame-White Aviation Co. All the visitors present were then invited on to the ground, and took part in a Battle of Streamers. While this *mélée* was in progress the decorated motor cars were circling round and round No. 1 pylon. The visitors entered into the fun of the thing with any amount more spirit than on the previous occasion, and, considering that in this country this is practically a new form of amusement, it went off remarkably well.

The Second July Meeting.

On Saturday last the second July meeting was held and a very good afternoon's work was put up, both as regards exhibition flying



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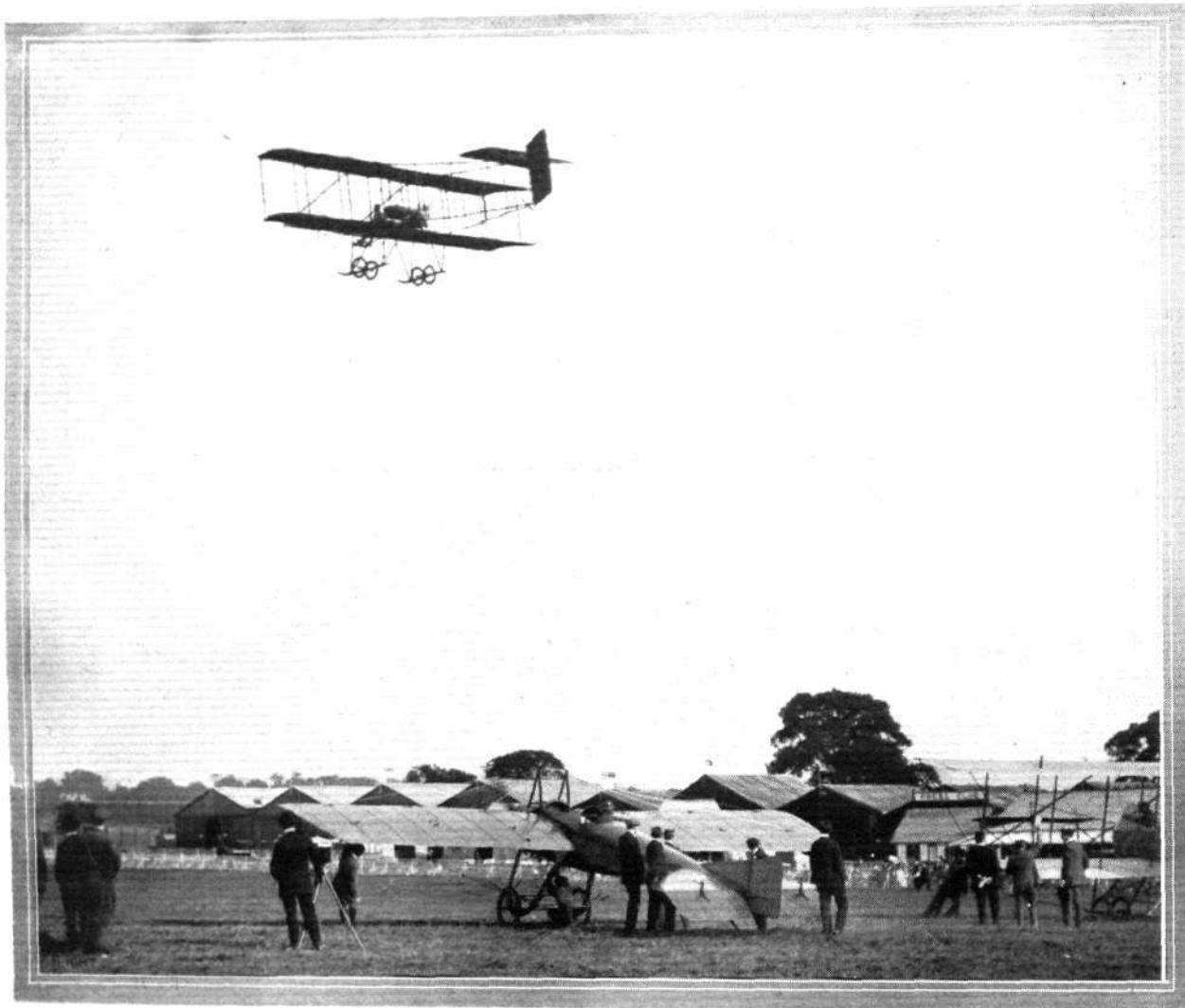
AERIAL FLORAL FETE AT HENDON AERODROME LAST WEEK.—The procession of decorated cars.

third prize for their glorified Thermos flask fitted to an Opel chassis. During the afternoon a large number of exhibition flights were made of which the wonderful flying of Beatty on his Gyro-Wright biplane formed the special attraction. The first out was W. L. Brock on the 110 h.p. Deperdussin. Marcus D. Manton was practising spiral dives à la Chevillard on the 50 h.p. Grahame-White, but the high wind prevented him from doing anything very startling, although what he did do was marvellous for a machine of this type. Pierre Vierreir was, as usual, taking up passengers on the Maurice Farman, and other flights were made by W. Carr on the Grahame-White and Lewis Turner on the 45 h.p. Caudron. At about 5 o'clock the Speed Handicap was flown, being held in two heats of six laps each and a final of eight laps. Three started in the first heat, viz. M. D. Manton on the Grahame-White, 3 mins. 5 secs. start, P. Verrier on the Maurice Farman, 30 secs. start, and W. L. Brock on the 75 h.p. Deperdussin, scratch. Verrier won an easy victory, and Brock came in a good second, whilst Manton, who was blown considerably out of his course, came in third. In the second heat four pilots lined up as follows:—Carr on the Grahame-White, G. W. Beatty on the Wright, Lewis Turner on the 60 h.p. Caudron, and Lieut. Porte on the 100 h.p. Deperdussin. Carr was overtaken by Beatty during the third lap, Turner also passing him shortly after. In the meanwhile Porte was rapidly catching up, and gained the lead

and racing. Shortly after 3 o'clock Claude Grahame-White departed on the 50 h.p. Morane-Saulnier for Luton, where he was giving exhibition flights. At about the same time W. L. Brock came out on the 75 h.p. Deperdussin, and made a high flight above the aerodrome, reaching an altitude of over 3,000 ft. M. D. Manton, on the 50 h.p. Grahame-White, Verrier on the Maurice Farman, and Beatty with a passenger on the Wright, ascended almost simultaneously shortly after. Manton was executing some marvellous spiral dives, which, together with Beatty's banks, caused much excitement. A second Grahame-White biplane then took the air, piloted by Carr, who was followed a few minutes afterwards by Spratt on the 100 h.p. Deperdussin, and Beatty, who was this time by himself. A quick succession of flights were then made by Brock, Manton, Verrier on another Maurice Farman, and Lewis Turner on a Caudron. Verrier during one of his flights took up two passengers, and put up some remarkable stunts, showing that the biplane was quite capable of carrying extra weight. At about 4.30, the first heat of the Speed Handicap took place. This was flown over six laps of the aerodrome, the starters being as follows: Carr on the Grahame-White, 3 mins. 9 secs. start; Beatty on the Wright, 2 mins. 34 secs. start; Verrier on the Maurice Farman, 14 secs. start; and Brock on the 75 h.p. Deperdussin, scratch. This heat resulted in a well-deserved victory for Beatty, who flew

only a few feet from the ground all the time, and appeared to miss the pylons by a matter of inches. Brock came in second, with Verrier 10 secs. behind him, Carr being some way behind, he complaining on landing of having had great difficulty in taking his corners. The limit man in the second heat was Marcus D. Manton on the Grahame-White, receiving 5 mins. start. Turner on the 45 h.p. Caudron, with 2 mins. 50 secs. start, went off next, and Lieut. Porte on the 100 h.p. Deperdussin was scratch. Manton kept ahead the whole time, but Lieut. Porte was rapidly overhauling him, coming in only 11 secs. behind. The final heat of 8 laps resulted in an excellent finish, the popular American pilot Beatty obtaining first place. The order of starting was as follows: Manton on the Grahame-White, 6 mins. 42 secs. start; Beatty on the Wright, 5 mins. 12 secs. start; Brock on the 75 h.p. Deperdussin, 1 min. 59 secs. start; and Lieut. Porte on the 100 h.p. mono. of the same make, scratch. At first it looked as though Manton and Beatty were going to put up a stiff fight, but at about the fourth lap

The next day, Sunday, was an ideal summer's day, and quite a large number of exhibition and passenger flights were put up during the afternoon before a large gathering. Proceedings commenced with flights by Verrier on the Maurice Farman, Manton and Noel on 50 h.p. Grahame-White. Later these pilots took up numerous passengers, and also made numerous solo flights. W. L. Brock put up some very fine flying on the 75 h.p. Deperdussin. The feature of the afternoon, however, was the flying of M. Marty, the well-known Caudron pilot, on the Morane-Saulnier. Towards the close of the evening, J. L. Hall, who had taken up a passenger on his "Votes for Women" Blériot, experienced what might have been an exceedingly nasty accident. It appears that the passenger accidentally turned off the petrol, with the result that the engine stopped, and before Hall could prevent it the machine dived into the Half Crown enclosure. Fortunately most of the visitors had by this time left the Aerodrome and there was no one on the spot where the machine



AERIAL FLORAL FETE AT HENDON AERODROME.—The first heat of the Speed Handicap. Manton, on the Grahame-White biplane, completing his first lap, with Brock and Verrier still waiting to take up their start in the race.

Manton's engine began to give trouble and, as he dropped considerably when going with the wind, he wisely decided to descend. The two monoplanes, although they only started after Manton had completed about three laps, caught up in a remarkable manner, and, on the last lap, everyone thought that Brock would overtake Beatty. The latter, however, managed to cross the line just $\frac{1}{2}$ second ahead of Brock. The times and handicaps of the last heat were:—

Speed Handicap. 8 laps (12 miles). Start. Handicap

m. s. m. s.

1. G. Beatty (50 h.p. Wright biplane) ...	5 12	17 16
2. W. Brock (75 h.p. Deperdussin monoplane)	1 59	17 16 $\frac{1}{2}$
3. Lieut. Porte (100 h.p. Deperdussin monoplane) scratch		17 46

During the final heat Gustav Hamel arrived on his Blériot from Brooklands, accompanied by two lady passengers.

crashed to earth. Both the pilot and the passenger were fortunate enough to escape injury, but the machine was pretty effectively done in. One of the passengers taken up by Beatty on Saturday was Mrs. Hewlett, who enjoyed her experience very much.



The Flying Derby.

THE Second Aerial Derby is announced to take place on Saturday afternoon, September 20th, permission having now been granted by the Home Office for the competitors to cross certain prohibited areas on this occasion. The course extends over a distance of nearly 100 miles, making a complete circuit of London. It will be remembered that this race proved one of the most exciting events of last year, and it is expected that on this occasion over twenty airmen will compete, including many well-known Continental pilots, who will fly from France and Germany some days prior to the race.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, July 29th, 1913, when there were present: Mr. Roger W. Wallace (in the Chair), Mr. Griffith Brewer, Col. J. E. Capper, C.B., R.E., Mr. G. B. Cockburn, Prof. A. K. Huntington, Mr. F. K. McClean, Mr. Mervyn O'Gorman, C.B., Mr. C. F. Pollock, Mr. T. O. M. Sopwith, and the Secretary.

New Members.—The following new members were elected:—H. W. S. Chilcott, T. W. F. Gann, Capt. H. H. Shott, Count S. C. Bescuccia Villafranca, and B. C. M. Western.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

No.	Date.	
558	July 3, 1913	William Sterling Roberts (Bristol Biplane, Eastbourne School, Eastbourne).
559	July 12, 1913	1st Class Air-Mechanic Charles Gallie (Maurice Farman Biplane, Central Flying School, Upavon).
560	July 14, 1913	Hans Rolshoven (Avro Tractor Biplane, Avro School, Shoreham). (Subject to permission of the Aero Club of Germany.)
561	July 16, 1913	Col. Nevill Maskelyne Smyth, V.C. (Deperdussin Monoplane, Deperdussin School, Hendon).
562	July 16, 1913	Lieut. Gordon Steuart Low, R.G.A. (Bristol Biplane, Bristol School, Brooklands).
563	July 16, 1913	Robin Grey (Bristol Biplane, Bristol School, Brooklands).
564	July 17, 1913	Edward Thomas Newton-Clare (Vickers Biplane, Vickers School, Brooklands).
565	July 19, 1913	Bernard H. E. Howard (Bristol Biplane, Bristol School, Brooklands).
566	July 19, 1913	Sub-Lieut. Ian Hew Waldegrave Stair Dalrymple-Clark, R.N.R. (Caudron Biplane, Ewen School, Hendon).
567	July 21, 1913	Lieut. Barry Fitzgerald Moore (Grahame-White Biplane, Grahame-White School, Hendon).
568	July 21, 1913	Robert Reginald Skene (Bristol Biplane, Bristol School, Brooklands).
569	July 21, 1913	Lieut. Arthur Cecil Herbert Adrian Eales, I.A. (Grahame-White Biplane, Grahame-White School, Hendon).
570	July 26, 1913	Capt. Bryan Charles Fairfax (Durham Light Infantry) (Vickers Biplane, Vickers School, Brooklands).

The following Aviator's Certificate was taken in France:—Archibald Ford.

Public Safety and Accidents Investigation Committee.—On the motion of Mr. G. B. Cockburn the report on the fatal accident to Major A. W. Hewetson was unanimously adopted. (Report will be found under these notices).

Daily Mail £5,000 Prize: Circuit of Great Britain.

The Contest for the *Daily Mail* £5,000 Prize will start from Southampton, on Saturday, August 16th, 1913, at 6 a.m.

The Royal Motor Yacht Club has kindly arranged to extend Honorary Membership of its Club to all Members of the Royal Aero Club during the period covered by the Race. The Headquarters of the Royal Motor Yacht Club is the "Enchantress," which is moored in Southampton Water off Netley Hospital. It is proposed to start the race in close proximity to the "Enchantress."

The following competitors will take part:—

Mr. S. F. Cody	Mr. James Radley
Mr. F. K. McClean	Mr. T. O. M. Sopwith

Officials at Southampton.—The following officials have been appointed for Southampton:—Mr. F. P. Armstrong, Mr. G. B. Cockburn, Col. H. C. L. Holden, Mr. N. C. Neill, Mr. Alec Ogilvie.

Marking Committee.—The following officials have been appointed to carry out the marking of the competing aircraft:—Mr. G. B. Cockburn, Mr. N. C. Neill, and Mr. Alec Ogilvie.

The members of the Royal Motor Yacht Club have kindly promised to place several motor-boats at the disposal of the Club to keep the course clear in Southampton Water.

Assistance has been promised for Ramsgate by Mr. A. H. Ramsden-Tagore with his yacht "Mildred," and Mr. L. W. Thomas with his yacht "Vacuna." At Inverness, the Kessock Ferry Co., Ltd., are supplying a steam-launch, and at Kingstown, Dublin, Mr. Oliver Fry has promised a motor-boat.

The First Lord of the Admiralty has kindly placed the various Naval Air Stations round the coast at the disposal of the Club for this Contest. The Naval sheds at Calshot will be used by the Competitors at the starting place, and the other Naval sheds round the coast are available in case shelter is necessary. In addition, every assistance will be rendered to the competitors for repairs at the Naval Stations.

Aerial Navigation Acts, 1911 and 1913.

EXEMPTION.

The Secretary of State hereby grants the following Exemption from the Orders under the Aerial Navigation Acts, 1911 and 1913, made by him March 1st, 1913.

Seaplanes taking part in the *Daily Mail* Circuit of Great Britain Race, 1913, may, during the course of the race, pass within the following prohibited areas, subject to the conditions specified below:—

(1) **Spithead.**—On condition that, starting from Southampton Water, near Calshot or Hamble, they pass between the Calshot and Calshot Spit Lightships; that they fly thence in a direct line to Horse Sand Fort, passing within a distance of 400 yds. from that fort, and thence East-South-East into the English Channel; that on the return journey they pass South of St. Catherine's Point off the Isle of Wight, thence to the Nab Lightship, leaving it on the left hand, and thence to Horse Sand Fort, and so back to Southampton Water by the same course and under the same conditions as at the start; and that while in the Spithead prohibited area, no seaplane shall rise to a greater height than 300 ft. above sea level.

(2) **Dover Castle and Archcliffe Fort.**—On condition that no competitor shall pass nearer the shore than a distance of 800 yards seaward from the end of the Admiralty Pier, nor at a height exceeding 300 feet.

(3) **Newhaven, Lydd, and Montrose.**—These areas shall not be prohibited to persons competing in the race.

(4) **All other prohibited areas in the line of flight.**—On condition that no competitor flies within 800 yards of the land or at a greater height than 300 feet above sea level while passing through the prohibited area.

(5) No departure from these conditions shall be permitted except in case of emergency.

EDWARD TROUP, Under Secretary of State.

Home Office, July 23rd, 1913.

Hydro-Aeroplane Race at Cowes.

SIR THOMAS LIPTON has kindly presented to the Royal Aero Club a trophy of the value of one hundred guineas to be raced for at Cowes, on the Wednesday of Cowes week, viz.:—August 6th, 1913. The Royal Yacht Squadron, who have been communicated with on the matter, have suggested that the race should start after 4 p.m., by which time the Yacht Racing for the day would probably be over, thus allowing a large number of spectators to view the race.

The race will be open to Hydro-aeroplanes, and will be over a course of about 60 miles in the vicinity of Cowes.

The race will be flown on handicap, and entries must be sent to the Royal Aero Club on or before Saturday, August 2nd, 1913, accompanied by an Entrance Fee of one guinea.

Mr. C. Grahame-White has entered and will pilot a Morane-Saulnier Hydro-aeroplane.

World's Altitude Record.

On Sunday last, July 27th, at Brooklands, H. G. Hawker on a Sopwith Tractor Biplane fitted with an 80 h.p. Gnome, accomplished a world's altitude record for a pilot and three passengers. The height recorded was 8,400 ft. (about 2,560 metres). The previous record stood at 1,680 metres by Marty. The Royal Aero Club has sent the figures over to the Fédération Aéronautique Internationale for acceptance as a World's Altitude Record.

British Altitude Records.

The report of the National Physical Laboratory on the barograph used by H. G. Hawker on a Sopwith biplane at Brooklands, on June 16th, 1913, has now been received and the following British Altitude Records have been granted:—

Pilot and one passenger 12,900 ft. H. G. Hawker.

Pilot and two passengers 10,600 ft. H. G. Hawker.

The previous British Altitude Records were:—

Pilot and one passenger 10,560 ft. Lieut. G. de Havilland.

Pilot and two passengers 8,400 ft. Maj. E. L. Gerrard, R.M.L.I.

Accidents Investigation Committee.

Mr. W. E. de B. Whittaker has been appointed an official representative of the Club at Hendon for the investigation of Accidents.

166, Piccadilly, W. HAROLD E. PERRIN, Secretary.

ACCIDENTS INVESTIGATION COMMITTEE OF THE ROYAL AERO CLUB.
REPORT No. 16.

REPORT ON THE FATAL ACCIDENT TO MAJOR ALEXANDER WILLIAM HEWETSON, WHEN FLYING AT LARKHILL, SALISBURY PLAIN, ON THURSDAY, JULY 17TH, 1913, AT ABOUT 6.20 A.M.

The Committee having carefully investigated the fatal accident to Major A. W. Hewetson whilst flying a Bristol monoplane at Larkhill, Salisbury Plain, on Thursday, July 17th, 1913, has come to the conclusion that it, the accident, was due to lack of skill on the part of the pilot. Major Hewetson had been a pupil at the Bristol School for about two months, and during this flight, which he was making in order to qualify for the Aviator's Certificate, he over-

banked the aircraft at about 100 feet on a left-hand turn, and this was followed by a nose-dive to the ground.

It is possible that owing to his overbank, the pilot slipped transversely on the double seat, of which he occupied the right-hand side, and thus lost any chance he might have otherwise had of righting the aircraft.

The pilot was thrown clear of the aircraft and was killed instantaneously.

The aircraft, after striking the ground, caught fire. The wind at the time of the accident was steady and not more than five miles per hour.



NUNEATON LANDING GROUND.—This landing ground, which has been provided by Mr. E. F. Melly, of Nuneaton, is now ready. An excellent hangar to accommodate aeroplanes has been erected in a large field at plan, is 12 acres, and is excellent in every way for alighting purposes. The field, which is seen near the railway junction in the above the size is 50 ft. by 50 ft. This field has been provided as a public alighting ground, and is open to all aviators. Anyone wishing to make use of the field and hangar is requested to notify Mr. Bert Ward, Attleborough Fields Farm, Nuneaton, who has the key. The charge for landing and the use of the hangar is to be only 2s. 6d. for the present year.

FROM THE BRITISH FLYING GROUNDS.

Brighton-Shoreham Aerodrome.

ALTHOUGH windy weather has prevailed here recently, comparatively speaking excellent work has been done. Last week, on Wednesday, Mr. Eric Pashley was on his H. Farman machine doing very clever stunts, and the Avro School under Instructor Geere were kept fairly busy. The British Medical Association visited the 'drome on Friday, when the chief event was the ascent of Monsieur Henri Bregi in the 130 h.p. Breguet biplane, accompanied by Mrs. Buller as passenger. Mr. Pashley also gave a fine exhibition, and Mr. Geere put in one or two flights on an Avro. On Sunday, Gaskell, Shaw and Geere on Avro, and Pashley Bros. on H. Farman, taking passengers. The new Breguet waterplane, which has the appearance of being an efficient machine, was towed to the West Pier, Brighton, where it now awaits trials. On the same evening, Mr. Pashley's engine let him down some way from the 'drome, but he returned quite easily, and subsequently gave Mr. Albert Pashley a joy-ride. Mr. Pashley flew to Worthing and back; the Avro school also putting in some good work. By the time these notes appear, Mr. Grahame-White should be at Brighton (Volk's Hangar) with his Morane mono-waterplane, and Mons. Bregi should be out on the Breguet machine.

Brooklands Aerodrome.

The week-end had some exciting and interesting incidents after a week's windy weather. Early Saturday, one of the Vickers pupils—Capt. B. C. Fairfax of the Durham Light Infantry—passed his *brevet* tests in most workmanlike manner, flying steadily throughout with good banked turns and landing close to mark. Mr. Hamel flew to Hendon and back on his 80 h.p. tandem Blériot monoplane, carrying Miss Trehawke Davies and another lady passenger, the return journey being made in 12 mins.

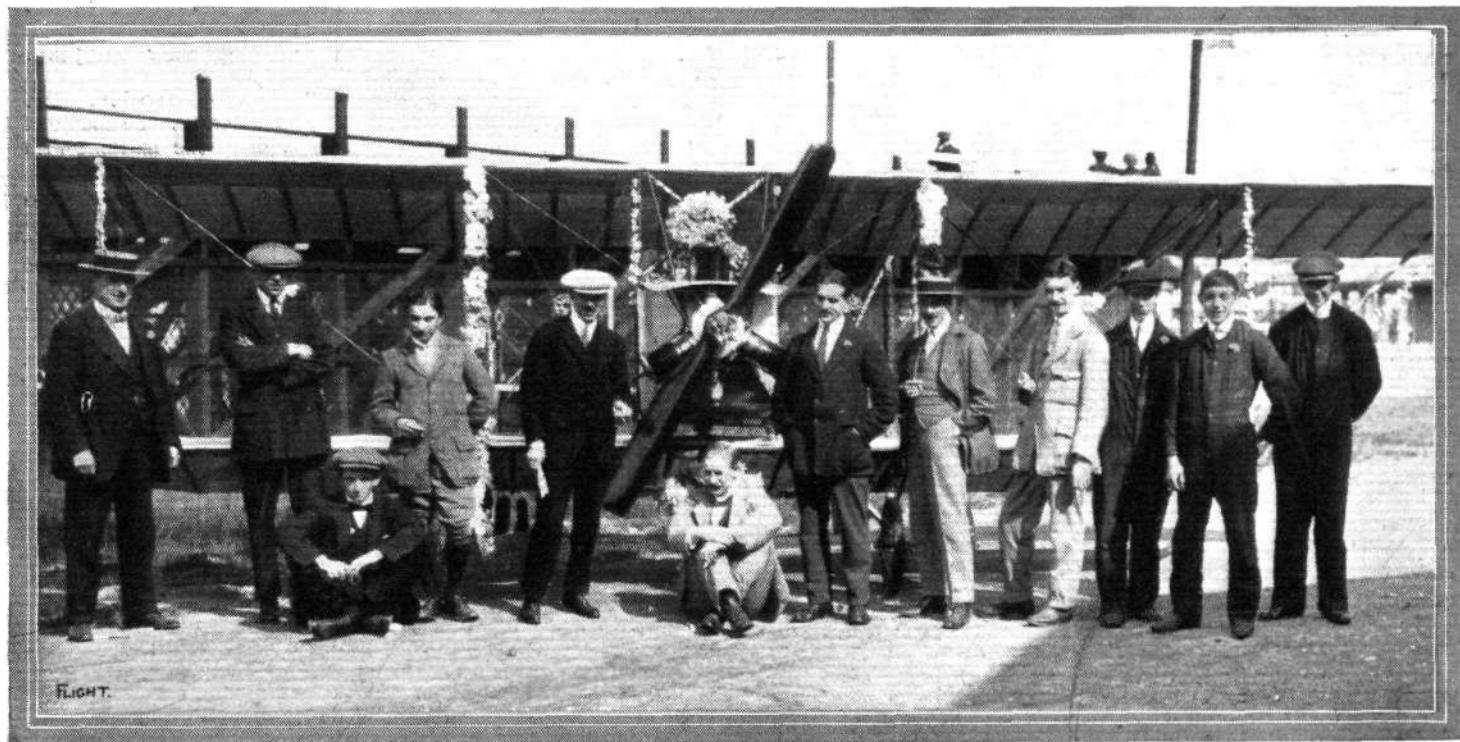
On Sunday afternoon, as Mr. Hamel was driving to Brooklands in his car, he espied a balloon in the sky and decided to chase it on the off chance of finding some friends on board. Accordingly, on arrival at the aerodrome he got out his machine and speedily overhauled the balloon about five miles from Brooklands. The occupants he found consisted of his friends Lord Edward Grosvenor and Captain Maitland, who had a lady with them. When circling round the balloon, Mr. Hamel passed within a few yards and could plainly hear his friends' greeting, although they in their turn could not hear him on account of the noise made by his motor. Mr. Hamel was busy flying with passengers until 8 o'clock. Miss Teddie Gerrard again enjoyed further flying with Mr. Hamel. Mr. Barnwell made a long cross-country flight on the 50 h.p. Blériot monoplane. Mr. Merriam gave some fine exhibition flights on the Bristol biplane, including his now famous spiral descents. Mr. Bendall

was also busy on the Bristol biplane. Mr. Barnwell took up some passengers on the Vickers biplane, including the winner of the ballot for the free passenger flight—Mr. C. Hill, of Coldharbour, Pyrford, Woking—but the last item of an eventful afternoon's flying was a successful attempt on the world's and British altitude records with three passengers by Mr. Harry Hawker on the Sopwith



Lieut. Eales, who has just passed for his Royal Aero Club *brevet* at the Grahame-White school, Hendon.

tractor biplane fitted with an 80 h.p. Gnome motor, in which a steady climb was made to a height of 8,500 ft. The weather conditions were rather hazy, and in a preliminary trip Mr. Hawker lost sight of the aerodrome at 1,500 ft., although he and his machine were in sight all the time. It was most interesting to watch



"Flight" Copyright.

AT THE W. H. EWEN SCHOOL AT HENDON.—Reading from left to right Messrs. A. E. Hunter, F. W. Goodden, H. Gist, A. Newman, L. W. F. Turner (chief pilot), Dr. E. Stoddart, E. Baumann (instructor), E. J. Trenchant, A. L. Russell, H. Hill, G. Hedges, F. Turner.

Mr. Hawker sweeping round in circles through the clouds whilst trying to pick up the bearings of the aerodrome.

Bristol School.—Bendall first out on Monday last week, Merriam following, then both instructors up with Lieuts. Mead, Leivis and Darley. Lieut. Mead later in front seat Merriam teaching behind. Wind stopped further work. After breakfast tuition to pupils on machines in the hangars. 5.30 p.m., Merriam allowed Mr. Skene to test conditions, having perfect confidence in his flying capabilities. Afterwards this pupil took second half of ticket in exceptionally good style, reaching a height of 1,600 ft., and doing very short figures of eight, taking a spiral descent to mark with engine cut off, probably a record height for pupil taking his ticket on biplane. One and all remarked they had never seen a pupil take his ticket better. Merriam up behind Lieuts. Mead, Darley and Leivis on several straights and circuits. Afterwards wound up with solo.

Merriam out first testing on Tuesday, and up behind Lieuts. Darley, Mead and Leivis on several straights and circuits, the former pupil is progressing very rapidly, and will soon go for his ticket. Merriam finished by giving Lieut. Leivis some experience in a choppy wind. Too much wind for flying in the evening.

On Wednesday, Merriam testing found it a little bumpy. Mr. Richard Powell for solo, flying well. Merriam up behind Lieut. Darley on straights. Very windy the rest of the day.

Merriam testing on Thursday, and later with Lieut. Roche (new pupil) for his first trip, also with Lieut. Mead. Afterwards the conditions were too bad for teaching. No flying in the evening owing to wind, and windy all day Friday.

On Saturday, Bendall test, then behind Lieuts. Mead and Darley, and later with Lieut. Roche. Mr. Richard Powell solo, and practising landings. All pupils then had two turns. 5 p.m., Merriam test and exhibition flight. Afterwards up with Lieut. Roche for a long flight, and behind Lieut. Darley for several straights and circuits. Bendall testing another machine and up with Lieut. Roche. Merriam again with this pupil, and a short trip to Mr. Harford (prospective pupil).

Vickers Flying School.—Monday, in evening, last week, Knight and Barnwell on biplane No. 20. Barnwell test on No. 2 mono. Mr. Elsdon straights.



Air-Mechanic Henry Vaughan Jarrard, of the 4th Squadron Royal Flying Corps, who took his Royal Aero Club brevet in good style, with particularly good landings, recently, he being the first air-mechanic to take his certificate on a BE.

In morning, Tuesday, Orr Paterson test on No. 20 biplane. Capt. Fairfax solo circuits and 8's. Knight solo. After test by Knight, Mr. Elsdon straights on No. 2 mono.

Early Thursday morning, Knight test on biplane No. 20. Messrs. Fairfax and Orr Paterson solo. Wind rather bumpy.

Barnwell test flight on biplane 20, Saturday, Capt. Fairfax solo. Capt. Fairfax then for brevet, getting through very well in a gradually increasing wind. Mr. Orr Paterson solo; Barnwell test on No. 3 mono.; Mr. Newton-Clare straights; Mr. Elsdon straights.

Sunday afternoon, Barnwell on biplanes 20 and 21 with passengers.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Lieut. Moore out at 4.55 a.m., Monday, last week, on No. 109, doing first half of brevet tests at altitude of 450 ft., later passing the second half in good style. Mr. H. Russell out at 6.3 a.m. doing circuits at 300 ft. Sir A. Sinclair also out practising. Mr. Russell again out, reaching an altitude of 1,200 ft., and afterwards passing all brevet tests in excellent style, reaching a height of 1,300 ft.



Air-Mechanic Frank Pratt, of the 3rd Squadron, Royal Flying Corps, who secured his pilot's certificate on a Bristol biplane at the Bristol school.

Lieut. Eales out at 4.53 a.m., Tuesday, last week, doing circuits under superintendence of Instructor Manton; this pupil, later on in the morning, passing all brevet tests successfully.

Weather too bad for outside schoolwork, Wednesday, Thursday, and Friday.

British Deperdussin School.—Monday, last week, on No. 3, Lieut. Cogan 10 mins., Mr. Murray 10 mins., Mr. Banks-Price (new pupil, first lesson) 10 mins. Mr. Mahla taxied home as wind sprang up. On No. 5 Mr. Bauman 15 mins. exhibition flight to 500 ft., first time on this machine. Made really fine flight with good landing. Mr. Brock on 75 h.p., solo to 600 ft., then with passenger to 1,000 ft.

Tuesday on No. 3, Lieut. Cogan 8 mins., Mr. Murray 5 mins. Rain stopped work, so Mr. Banks-Price taxied home. In afternoon Mr. Brock special exhibition flight for party of visitors on 35 h.p. to 1,000 ft., landing with beautiful spiral *vol plané*.

Lieut. Porte won speed handicap Thursday on 100 h.p. Mr. Brock on 75 h.p. also in race. Later Mr. Spratt made couple of solo flights on 100 h.p. for first time, handling the machine with great skill.

Mr. Spratt passenger carrying Friday, each time to over 2,000 ft., on 100 h.p.

Saturday, Lieut. Porte on 100 h.p., Mr. Brock on 75 h.p., in speed handicap. After splendid race Mr. Brock finished a good second to Mr. Beatty on the 50 h.p. Gyro-Wright. Previous to racing Mr. Brock took a passenger to St. Albans and back at 1,500 ft. After the racing, Mr. Spratt carrying passengers on 100 h.p., and Mr. Brock ditto on 75 h.p. Mr. Brock and Mr. Spratt gave many fine exhibition flights with passengers during Sunday afternoon on 75 h.p. and 100 h.p. respectively.

W. H. Ewen School, Hendon.—The weather conditions last week were very unfavourable for flying.

On Monday the school was out at 4.12 a.m. under the instruction of Mr. L. W. F. Turner and M. Baumann. M. Baumann, after testing the 35 h.p. Caudron No. 2, handed the machine over to Messrs. Jaggenberg and de Havilland who were doing straight flights, and Mr. T. L. Holbrow who was rolling. Mr. L. W. F. Turner made test flight on the Caudron No. 1 and then handed machine to Messrs. L. A. Strange and H. Gist, who were doing circuits, while Messrs. Beatty, Stewart, Warren and Goodden were making flights on same machine. The pupils were out again in the afternoon, when M. Baumann, after test flight on No. 2, handed machine to Messrs. Jaggenberg and de Havilland, who were making short flights, and Capt. Jenings, who was making good improvement in straight flights.

All the rest of the week the wind was too strong for pupils' flying, but on Thursday, exhibition flights were given by M. Baumann and Mr. L. W. F. Turner on 35 h.p. and 45 h.p. Caudrons.

Salisbury Plain.

Bristol School.—Jullerot for trial on Monday last week, and Busteed up with Lieut. Pascanu as passenger on tractor biplane. Pixton with Capt. Buckland, and Sippe for solo on tandem monoplane. Capt. Popovici monoplane solos at good height, landing well.

On Tuesday, Capt. Popovici for monoplane solo, after Jullerot had made a trial of the air. Pixton with Capt. Buckland, Surgeon Hitch, Lieut. Lee, and Mr. Courtney, Lieuts. Pascanu and Beroineade, Sippe with Lieut. Bateman on sociable monoplane.

Wind far too bad for tuition all day on Wednesday. Instruction carried on in the hangars.

Busteed with Capt. Popovici on Thursday for half hour on tractor biplane. Then with Capt. Buckland and Surgeon Hitch on biplane. Pixton with Capt. Murphy, Surgeon Hitch, and Mr. Courtney for two biplane trips each. Capt. Popovici, Lieut. Pascanu, and Lieut. Beroineade good monoplane solos. Pixton with Surgeon Hitch, Lieut. Spence, Lieut. Bateman, and Mr. Courtney, two trips each, and with Capt. Murphy. Jullerot tuition to Lieut. Bateman, and solo on monoplane. Busteed two flights on tractor biplane and Capt. Popovici solo on tandem monoplane.

On Friday, weather too bad in the morning for flying. Busteed with Capt. Popovici for fully an hour with many landings. Pixton biplane tuition to Capt. Buckland. Surgeon Hitch and Mr. Courtney twice each, and a passenger. Busteed long tractor biplane flight with Pizey as passenger.

Conditions too bad for tuition in the morning on Saturday.

Royal Flying Corps, No. 3 Squadron (Netheravon).—Lieut. Wadham was out Monday week for two flights, one lasting for one hour at 7,850 ft. on Avro 285. Later Lieut. Joubert-de-la-Ferte made a 16 mins. flight on Avro 290. Lieut. Conran on Avro 288 made three flights of 55, 45 and 67 mins. respectively, in one getting up to 10,000 ft., from which height he landed by eleven spirals. Capt. Herbert and Lieut. Allen were on Henry Farmans, the latter taking up Capt. Taylor and Mechanic Miles as passengers.

Capt. Herbert and Lieut. Allen out early Tuesday on Henry

Farmans, the latter taking up Lieut. Porter and Mechanic C. Littlejohn for reconnaissance work. Lieut. Joubert-de-la-Ferte on Avro 290, flying for 62 mins. at 4,500 ft. Lieut. Wadham also on Avro 285, flying for the Army Height Record. He reached over 10,000 ft., and shut off his engine at that height. His flying time was 1 hr. 20 min. and he made a splendid spiral descent.

On Wednesday Lieut. Joubert-de-la-Ferte made a good cross-country flight to Farnborough on Avro, taking 1 hour 15 min. on the outward and returning in an hour at 4,000 feet.

Captain Fox up on Blériot 221 for a few minutes. Lieut. Roupell on H. Farman 286, with Lieut. Le Breton as passenger, dropping message bags. Lieut. Cholmondeley on H. Farman 274 for two flights, taking up Mec. Mitchell as passenger.

Thursday morning, Capt. Herbert was up flying with four mechanics, Gliddon, Warland, Miles and O'Gorlegian, and taking photographs of the camp from the Henry Farman. Lieut. Conran on Avro for 1 hour at a good height, after which he went to Chichester and back in an hour and a half. Major Brooke-Popham on Avro 285, after which Lieut. Abercrombie was piloting the machine for a few minutes. Lieut. Cholmondeley made a good flight with Lieut. Wadham as passenger on H. Farman, flying to Lulworth Cove and back in 1 hr. 50 mins. Later, Lieut. Cholmondeley up twice with Miles, and Lieut. Roupell with Wilson.

On Friday, Lieut. Cholmondeley on H. Farman made four flights, giving passenger trips to Major North, Mec. Mitchell, Boy Eley and Mec. Lewis, taking him for a good flight reaching the height of 3,000 ft., and landing with spirals from 2,500 ft. with the engine shut off. Lieut. Roupell took up Mecs. Pratt and McCudden. Capt. Herbert afterwards made a flight on H. Farman.

Lieut. Roupell on H. Farman with Air-Mechanic Aylen, on Saturday went over to Wooton, near Oxford, in 1½ hours, and took an hour to get back. Major Brooke-Popham up 50 mins. on Avro.

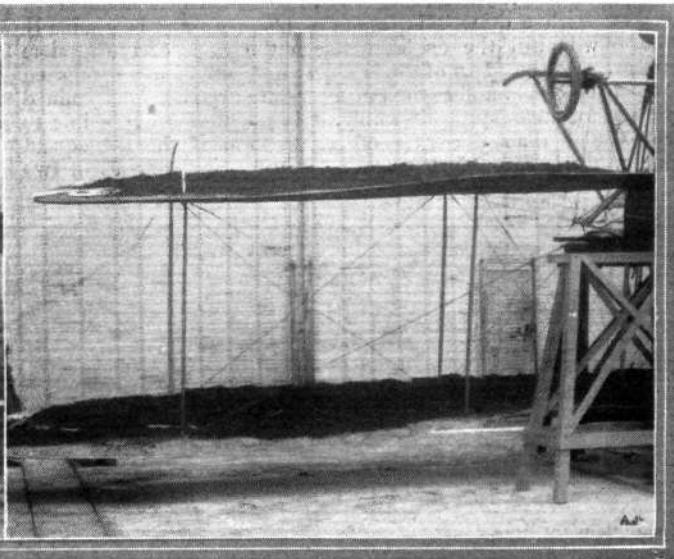
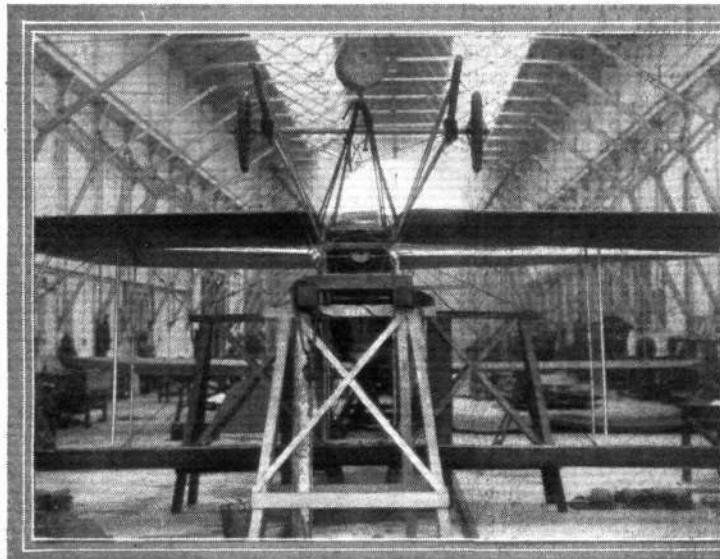
No. 4 Squadron.—Lieut. Playfair up on BE 201 for 20 mins. at 1,100 ft. Capt. Beor also made a few minutes' flight on this machine. Air-Mechanic Jerrard on BE 201 for 20 mins. at 500 ft.

* * *
THE SAND TEST.

The accompanying views illustrate how an aeroplane is turned upside down in order to have its wings loaded with sand for the purpose of testing their construction. At the Royal Aircraft Factory, the greater part of the load is applied by means of specially constructed ribbons containing shot. These ribbon bags, in which the shot is sewn in such a manner as to distribute it evenly, enable the greater part of the loading to be quickly arranged over the wing. The final adjustment of the load is then accomplished by loose sand, which is piled up to represent the distribution of the air

such tests as these is, of course, open to argument, but it is generally recognised that aeroplane wings are frequently subjected to twice their normal stress, and it is difficult to see any reason why a sand load of this magnitude should not be applied as a precaution against serious defect before any pilot is ordered to risk his life on a machine. It is obvious that a structure properly designed to withstand double load in the air cannot very well be harmed by a double sand load.

Some interesting experiments by means of sand loading were



pressure on the wing, corresponding to the conditions for which it is desired to make the test. At coarse angles corresponding to slow speed flight, the centre of pressure is probably about one third of the chord from the leading edge. For very fine angles corresponding to fast flight, the centre of pressure is situated somewhere near the centre of the chord or even behind that point.

The testing of wings in this way has been the subject of criticism from time to time, but everyone seems agreed that it is highly proper to make some sort of actual test of the completed wing structure *in situ*, and no one has yet, so far as we are aware, advanced a feasible alternative. The magnitude of the load that it is proper to apply in

carried out recently in order to determine the strength of the fastening of the upper surface of the wing. Ordinarily the fastening was found to be much weaker than either the fabric or the rib, and it was not until the fabric had been sewn to the rib that the fastening became the stronger part. By suitably sewing the fabric to the rib the upper surface alone can be made to safely carry any load up to the breaking stress of the rib itself.

As the upper surface of a wing in flight contributes three-fourths of the lifting force, it is apparent that special importance attaches to the provision of an adequate fastening between the surface material and the rib.

PROPELLER MAKING AND REPAIR.

BRITISH ENTERPRISE AT THE RIVERSIDE WORKS.

It has been apparent to everyone engaged in the aviation industry that propeller making is a specialised business, for whether its specialisation is such as to engage the entire energies of an independent firm or not, the fact remains that the propeller making department of any works has small chance of producing successful results unless conducted with picked men under expert supervision.

As a rule, specialised products are more satisfactorily handled by independent concerns, and we feel particularly interested in the enterprise put forward by Messrs. Lang, Garnett and Co., who have now thoroughly established themselves in the ideally situated Riverside Works at Weybridge. Here, Mr. A. D. Lang is turning to account the very considerable experience of propeller making that he has had with the Bristol Co. and elsewhere, and we are quite satisfied that he is sparing no pains whatever to collect together a staff whose workmanship shall be a credit to aeronautics and to Britain.

The Riverside Works, which the firm of Lang, Garnett and Co. has acquired, are commodious and well-equipped with the necessary woodworking machinery. There is any amount of room for extension, and if the energy which is being put into its organisation results in the business that ought to be forthcoming this place should develop into quite a large factory in the course of a few years. Already it is probably the largest works solely devoted to propeller making in this country.

Besides the Lang propellers, which form, so to speak, the staple product of the firm, and one of which, by the way, was used by Sopwith in the Mortimer Singer Competition, the firm turns out a large number of BE propellers of the four-bladed type. First class workmanship and very particular superintendence is required to make a successful and profitable job of this form of propeller. The timber used is walnut and each layer of the lamination is halved in the boss so as to allow the corresponding layer of the other two blades to pass through at right angles.

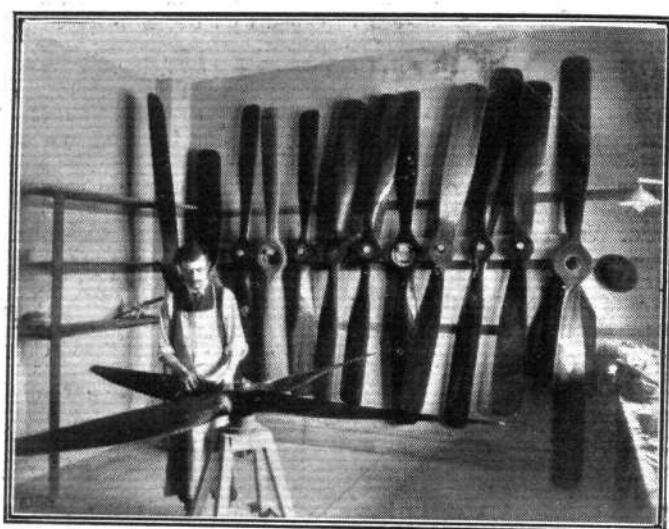
Each of the layers of these propellers is planed to a certain thickness and shaped to a separate template. The layers are then prepared with glue and placed one over the other in stepped formation. The distance from the edge of one lamination to the edge of the next has to be correct to half a millimetre. The laminæ are then clamped tightly together at frequent intervals, and the glue is allowed to set whilst they are thus arranged.

In building these four-bladed propellers, a flat-bench is used as a clamping base and very great care has to be taken in backing the blades with chocks of wood in order to prevent the clamps from exerting a twisting stress.

As soon as the glue is set, the projecting corners of the laminæ are hacked off with a draw knife and the blade surface is gradually shaped down until the angles between the steps of the laminæ disappear. As the edges of the laminæ are located on the finished surface of the blade, and as their positions are accurately determined in the first instance during assembly, it is practically impossible to develop other than the intended blade form if the subsequent workmanship is carefully executed. In any case, a series of two

part templates is used for the purpose of checking the blade section at intervals.

An extremely important branch of propeller work in which Messrs. Lang, Garnett are specialising is the repair of damaged blades. Very often a propeller gets slightly damaged by accident and it seems a pity to throw away £15 worth of material and workmanship if the expenditure of a sovereign or two will suffice to put it into good condition. Mr. A. D. Lang thoroughly recognises that the business of propeller repair is an undertaking of first-class seriousness and importance. Everything depends on the users of repaired propellers gaining confidence from continued immunity



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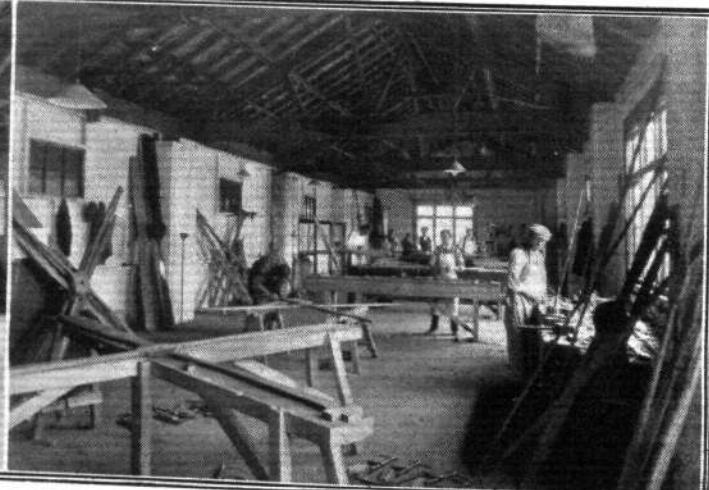
PROPELLERS IN THE MAKING.—A group of finished propellers at the Lang, Garnett Works. In the foreground a four-bladed BE propeller is being polished.

from trouble caused by repaired parts. The repairs are made by carefully cutting away the damaged portion and so chamfering and sloping the edges of the hole as to provide a dovetail for the inserted piece, which is always put in in the pressure side of the blade.

Having seen the work in process at Riverside, we can only say that so far as care and skill can make a repaired propeller secure, Messrs. Lang, Garnett & Co., spare no effort to justify an increase in the business that they are already obtaining from several quarters. They are also engaged on interesting experiments relating to the brass plating of blade tips for seaplane propellers.



PROPELLERS IN THE MAKING.—The interior of the machine shop of Messrs. Lang, Garnett and Co.'s riverside propeller works at Weybridge.



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Interior of Lang, Garnett and Co.'s Main Workshop.—In the foreground is seen the method of building up one of the BE four-bladed propellers.

BRITISH NOTES OF THE WEEK.

Hawker Secures a World's Record.

STEADILY H. G. Hawker, with the 80 h.p. tractor Sopwith biplane, is adding to his collection of records, and the last one, captured on Sunday last, has the additional merit of being a world's record. During the afternoon it had been very misty, and any machine which ventured up above 3,000 ft. was out of sight of the ground. It was a little windy, too, but this did not prevent Hawker giving passenger flights to two or three people. Soon after five o'clock the wind began to drop, and then Hawker decided to try for the pilot and three-passenger record. Accompanied by Messrs. Bellew, Jones and King, all full-weight passengers, he started off soon after 6 o'clock, and in a few minutes was out of sight. He continued on his way through the mist and heavy clouds until the barograph showed 8,400 feet, and then, having no notion of his exact position, he decided to come down, although the machine would have climbed for another 2,000 ft. or so if she had been allowed to do so.

This latest performance, coupled with those made on June 16th, and the winning of the Mortimer Singer prize by the Sopwith waterplane, also piloted by Hawker, still further emphasise the excellence of the construction and design of the Sopwith machines. Speaking of the June 16th records, it may be noted that the Royal Aero Club has just confirmed the figures as:—Pilot and one passenger, 12,900 ft.; Pilot and two passengers, 10,600 ft.

Bank Holiday Flying at Brooklands.

FOR August Bank Holiday, a record entry has been received alike for the motoring and the flying events. In the flying race amongst the entrants are: Mr. Hawker on his record-breaking Sopwith tractor biplane; Mr. F. H. Champel on his 100 h.p. Anzani biplane; Mr. Merriam and other pilots on Bristol biplanes; Messrs. Orr Paterson and A. Knight on Vickers biplanes; Mr. Morris Ducrocq on his Farman; Mr. Dunkinfield-Jones on his Flanders biplane (65 h.p. Isaacson); Mr. Jack Alcock on the Parsons Automatic Stability biplane (70 h.p. Gnome); and Mr. Spencer on his Spencer biplane.

The course for the race has been so arranged that the competitors will be in sight all the time, as that portion of the course outside the aerodrome is to Coxe's Lock Mills, which is situated less than a mile north of the track, while the finish will be between the Paddock and the railway.

Messrs. Armstrong, Whitworth's New Department.

FROM Newcastle it is learnt that the large tract of land at Selby recently acquired by Messrs. Armstrong, Whitworth and Co., is to be utilized for the new aeronautic department, which, in addition to making engines, will also build airships and aeroplanes. In all probability the bulk of the mechanical work will be done at the main works at Scotswood on the Tyne, but the machines would be assembled and tested at Selby.

Memorial to Lieut. Parke, R.N.

THE Archdeacon of Exeter (the Venerable F. A. Sanders) on Tuesday unveiled and dedicated, in Uplyme (Devon) parish church, a memorial stained-glass window which has been erected as a memorial to the late Lieut. Wilfred Parke, R.N., who was killed in an accident at Wembley last December. Lieut. Parke was a son of the rector of Uplyme.

Blériot's New Launching Device.

AT a private cinematograph demonstration on Monday, at which representatives of the War Office and Admiralty were present, pictures showing trials made with the launching and alighting device invented by M. Blériot were shown. In the first series of pictures

Pegoud was seen using the original arrangement in which a hook above the *cabane* caught on a trapeze which ran along a line suspended at Buc. This idea has now been superseded by a double claw arrangement mounted above the *cabane*. The pilot steers his machine under the cable and then elevates, the cable being guided down to the claws by a pair of curved horns. In starting, the machine runs along the cable until the flying speed is attained, when the claws are released and the machine, after just dipping slightly, flies off in the ordinary manner. The device is intended for use on warships, in which case the cable would be suspended over the side of the vessel by means of booms. The French naval authorities are taking a great deal of interest in the device, and experiments are shortly to be carried out on a French battleship.

The Daily Mail Round Britain Race.

AMONG the official notices of the Royal Aero-Club on page 847 will be found some further official information regarding the progress of the arrangements for the *Daily Mail* waterplane race round Great Britain. It will be seen that the first control will be at Ramsgate instead of Dover, as originally intended, while the other controls will be at Yarmouth, Scarborough, Aberdeen, Inverness, Oban, Dublin and Falmouth. The Admiralty have placed the various Naval Air Stations round the coast at the disposal of the Royal Aero Club for the contest.

Mr. H. Blackburn Carries Newspapers.

FOR some time, Mr. Harold Blackburn has been doing quite a lot of flying on his 50 h.p. Blackburn monoplane at Leeds, and on Wednesday, Thursday, and Friday of last week he carried a large bundle of the *Yorkshire Evening Post* from Leeds to York, landing at the ground of the Yorkshire Agricultural Show. On the first day he had to fight his way through a gale, as is shown by the fact that he took an hour for the trip, whereas on the two following days his time was 35 mins. Each day a large crowd gathered at York to welcome Mr. Blackburn, and needless to say the papers were eagerly sought after as souvenirs.



SUNDAY FLYING AT BROOKLANDS.—Drawing lots for the free flights amongst visitors, in which the fair sex seem to be particularly lucky.

AIRSHIP NEWS.

The New "Schutte-Lanz" Airship.

IT is stated that the new "Schutte-Lanz" airship, which should commence her trials very shortly, has no less than five gondolas, three of which are given up to motors and steering apparatus, &c. In the central gondola will be mounted two quick-firing guns, while in the other car will be one of the guns for fighting dirigibles and aeroplanes. The framework of this new dirigible will have the wooden laths of which it is constructed reinforced by bands of aluminium. Three 200 h.p. Maybach motors will be fitted, while the propellers will be 3'9 metres diameter, and have three blades.

The New German Army Zeppelin.

HAVING been taken over by German Army the latest Zeppelin up to now known as the "LZ 20," has been re-numbered "ZV."

With the Italian Military Dirigibles.

THREE fine cruises were made by Italian military airships on Sunday last. The "P2" went from Campalto to Udine, Palma-Nova and back to her starting point, covering 350 kiloms. in six hours; the "P4" went from Vigna di Valle over Rome to Civita-Veccchia and back, while the "P5," stationed at Verona, after passing over Custoza and Villafranca, made a long cruise over the Lake Garda.



Letort's Return from Berlin.

On the Morane-Saulnier monoplane with 9 cylinder 80 h.p. Rhone motor and Chauvière propeller on which a few days previously he had made his splendid non-stop flight from Paris to Berlin, Letort started on the return journey on the 23rd ult., being accompanied by Mlle. Galantchikoff. Leaving Johannisthal at 4.20 a.m., Hanover was reached three hours later. During the last hour the heavy rain made the going very hard, and as the conditions did not improve, Letort decided to postpone his departure. The next morning he started, but on account of the bad weather made a stop at Cologne. After waiting there for two days he made another start for France on Saturday morning and after flying for four hours landed at Bray-sur-Seine for want of petrol. Owing to the roughness of the ground the machine capsized on landing, but pilot and passenger escaped unhurt.



"Flight" Copyright.

SUNDAY FLYING AT BROOKLANDS.—Mr. H. Hawker giving a fine exhibition of his skill on the 80 h.p. Sopwith tractor.



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SUNDAY FLYING AT BROOKLANDS.—A few free flight candidates watching the winning numbers going up for free flights.

FOREIGN AVIATION NEWS.

Aerial Navigation between France and Germany.

ON Sunday, at the German Foreign Office in Berlin, Herr von Jagow, German Minister of Foreign Affairs, and M. Jules Cambon, the French Ambassador, exchanged notes regarding an agreement between the two countries on the subject of the regulation of aerial navigation between France and Germany, to which reference is made elsewhere.

Chevillard Suspended.

FOLLOWING on a report by the *Commissaires sportifs* on the subject of some flights which were made as Villacoublay on the occasion of the Franco-Spanish Fête in June, the Commission Sportive Aeronautique has suspended Chevillard for two months from

while on the return trip to Basle he landed for petrol at Liestal. Starting from Milan at 4.30 a.m. he passed over San Salvatore and Airolo, then through the Lukmanier Pass, which is 6,289 feet high at its summit, to Lucerne. The landing was effected at Liestal at 7.35, and at 8.15 Bider arrived at Basle, having flown right across Switzerland and covered about 250 kiloms. He was flying a Blériot monoplane fitted with Gnome engine and Chauvière intégrale propeller.

New Landing Grounds in France.

LAST Sunday saw the inauguration of three new landing grounds in various parts of France, which have been arranged by



FLIGHT.

An S.I.A. monoplane constructed by La Società Italiana degli Aeroplani, of Milan, one of the first really original machines built in Italy. It was on one of these machines that Deroye flew from Milan to Brindisi a few days ago.

July 21st to September 21st. Chevillard has entered a vigorous protest against this action, while Henry Farman has sent in his resignation from the Aero Club of France on the same account.

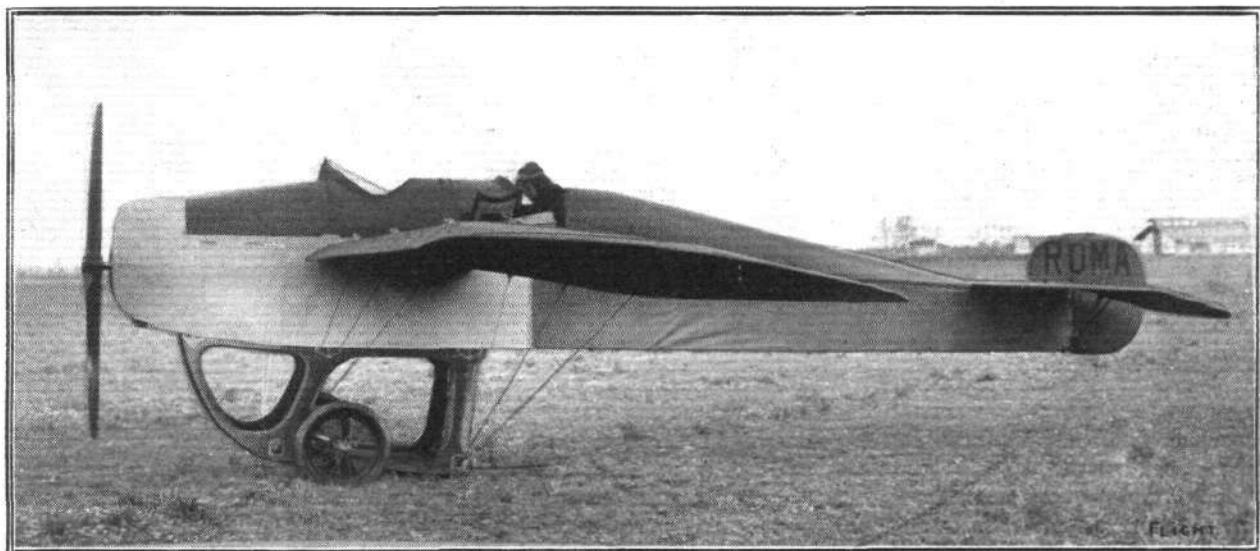
Mishap to Vedrines.

WHILE making a flight from Paris to Limoux, on Saturday last, Jules Vedrines was brought down at Langoiran, near Bordeaux, by an explosion in his petrol-tank. Unfortunately the morning was very misty and, owing to the rough ground, the machine overturned and was very badly damaged, but Vedrines escaped with severe bruises on his face and body.

the Comité Nationale. One is at Brienne-le-Château, another at Vitry-le-François, the third at Valenciennes. For the opening of the last mentioned, Gilbert flew over on his Morane-Saulnier monoplane while two Caudron biplanes, three Deperdussin monoplanes and a Blériot arrived from Maubeuge.

Paris to Nantes on a Morane.

HAVING arranged to give exhibition flights at Nantes, Brindéjoc des Moulinais, on Sunday, flew from Paris to Nantes with a stop at Angers.



FLIGHT.

Another view of the S.I.A. monoplane.

Bider Over the Gothard Alps Again.

OSCAR BIDER, the young Swiss pilot, by his trip from Milan to Basle on Saturday last once again showed that there is nothing particularly extraordinary in flying across the Alps or in flying in a country like Switzerland. It will be remembered that on the 13th ult. he flew from Berne to Milan with stop at Domodossola

Cavelier Tries for the Michelin Cup.

OVER the Etampes-Gidy course on the 22nd ult., Cavelier, on his Deperdussin, with 60 h.p. Gnome and Chauvière propeller, made an attempt for the International Michelin Cup. After covering the 111 kilom. course five and a half times, he was obliged to make a stop at Gidy.



Hauptmann Krey (on the left), the German aviator whose flights are recorded on the map on this page. In the centre is Fessa Bey, the Commander of the Turkish flying organisation.

Janoir Makes an Attempt for the Pommery Cup.

RAIN put an end to an attempt which was made by Janoir on his Deperdussin on the 22nd ult., to try and beat Brindepont des Moulinais' record for the Pommery Cup. Starting from Etampes he intended to fly to Berlin, Warsaw, and St. Petersburg, but near Namur he found the rain so heavy that he decided to fly straight back to Etampes, which place he regained after a non-stop flight of 6 hrs. 5 mins.

Guillaux also Makes a Start but Returns.

GUILLAUX intended commencing his flight to Casablanca for the Pommery Cup on the 24th ult., but owing to the unfavourable weather reports from Central France, he decided to postpone his start. He actually started from Issy on his Clement-Bayard mono-

plane on Saturday morning, but he returned after flying for 40 mins. through the thick mist.

Gilbert has a Busy Time.

AFTER spending some days flying in central France on his Morane-Saulnier monoplane, Gilbert arrived back at Villacoublay on the 23rd ult. On the following day he set off on his Henry Farman for the purpose of testing the new 60 h.p. 7-cylinder Rhone motor. With a passenger on board and 120 litres of petrol and 30 litres of oil he flew along the Loire to Blois and then returned to Villacoublay after making a non-stop flight of over four hours.

Adventures of M. Salmet.

ON Thursday morning of last week, M. Salmet left Buc on a Blériot monoplane for London, but after travelling for some time found the atmosphere so chilly that he landed near Rouen. Later he went on to Crotoy. From there he started on his cross-channel trip, but when about 2½ miles out at sea his engine stopped and the machine fell into the sea. M. Salmet was rescued by some fishermen and taken to Fort Mahon, near Berck-Plage, little the worse for his adventure.

E. Vedrines at Ponnier School.

EMILE VEDRINES has been appointed chief pilot at the Ponnier-Hanriot school which is now at Bouy, and he will share with Bielovucic the responsibility of looking after the sporting side of the firm's activities.

Long Trips by Lieut. Joly.

ON a biplane carrying a passenger, Lieut. Joly, on the 25th ult., started from Doeberitz and flew to Cologne, taking four hours for the distance of about 550 kiloms. Earlier in the morning, the two had arrived from Koenigsburg, to which point they had flown from Cologne on the previous day, a stop of about three hours being made at Johannisthal. The distance from Cologne to Koenigsburg is about 1,250 kiloms.

Delivering Farmans by Air.

ON the 22nd ult. Henry Farman, Chevillard, Fischer and Bille, each with a passenger, on Henry Farman military biplanes for the French army, flew across from Buc to Etampes, and the following day another three machines were delivered in the same way by Chevillard, Gougenheim and Bille.

A Joy Ride for Madame Blériot.

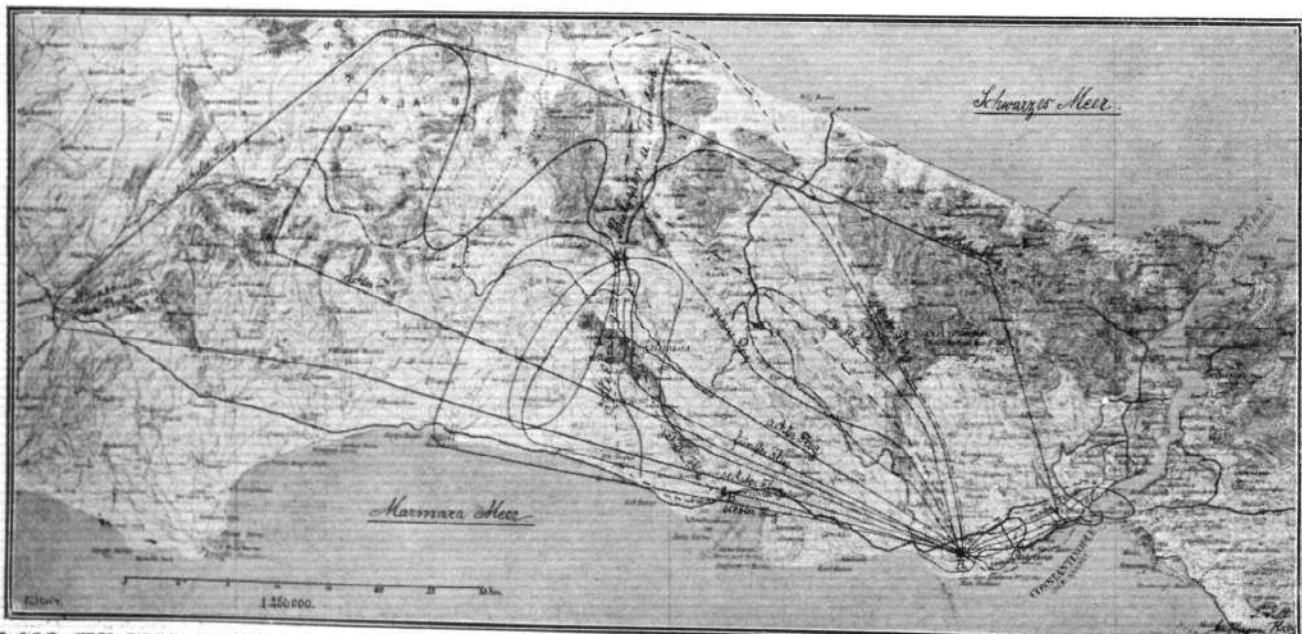
AT Hardelot, on the 24th ult., Perreyon, on his Blériot-Gnome, took Madame Blériot to a height of over 1,000 metres.

Cross-country on a Goupy.

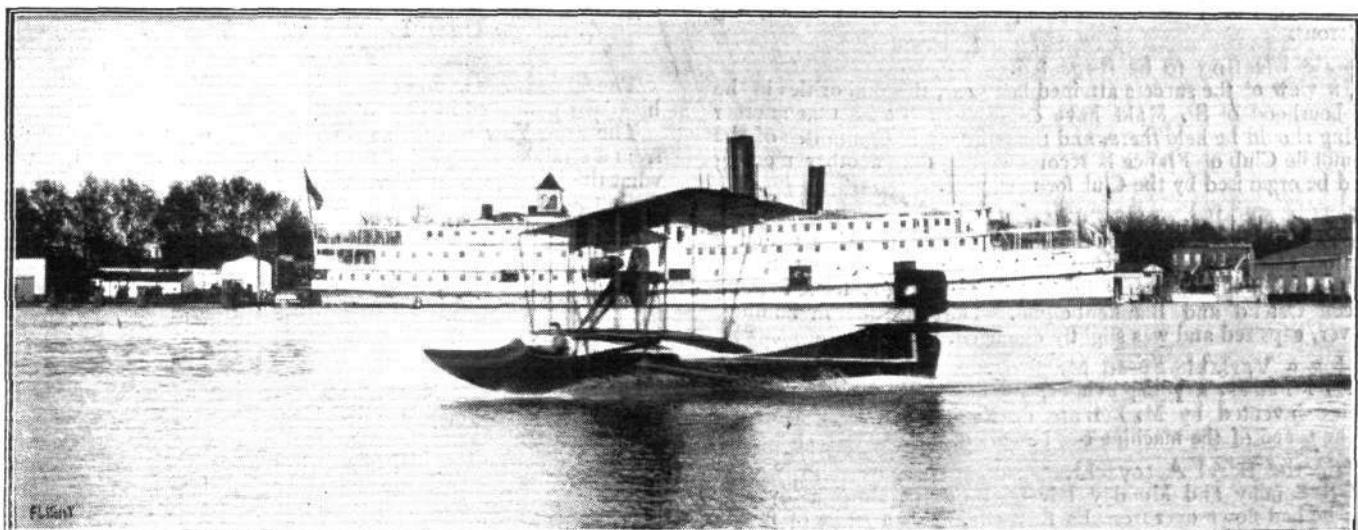
ON a Goupy biplane, fitted with a 10-cyl. 80 h.p. Anzani motor, Caillieaux, on the 25th ult., made a fine trip from Juvisy to Orleans and back.

Grahame-White at Villacoublay.

AMONG the visitors to Villacoublay on the 25th ult., was Mr. Claude Grahame-White personally testing his latest purchase, a 80 h.p. Gnome-Nieuport.



2,400 KILOMS. OVER THE ENEMY'S COUNTRY.—The above map gives in a remarkably graphic manner an idea of what flying work has been done in connection with the War between Turkey and the Balkan Armies. It is drawn up by Hauptmann Krey, who was the German aviator who made these remarkable flights during the hostilities. We reproduce it from the original of our contemporary the German Motor, the various flights being, it will be noticed, indicated in German in their order of flying, whilst across the centre of the map from top to bottom is shown the main fighting line of the Turkish and Bulgarian Troops.



THE COLUMBIA FLYING BOAT FITTED WITH 80 H.P. GYRO MOTOR.—This American-built waterplane is said to get off the water in 200 ft. with a passenger.

A Black Week for French Aviation.

AT Mourmelon, on the 21st ult., the biplane of Lieut. Gabriel capsized just as it was starting off for a flight, and the pilot and his mechanic—Sapper Malarte—were thrown out. The latter was struck by the propeller and instantly killed, but the officer escaped serious injury.

On the 23rd ult., Lieut. de Gensac, one of the best military pilots in France, succumbed to injuries which he had received in a motor car accident on the previous Monday.

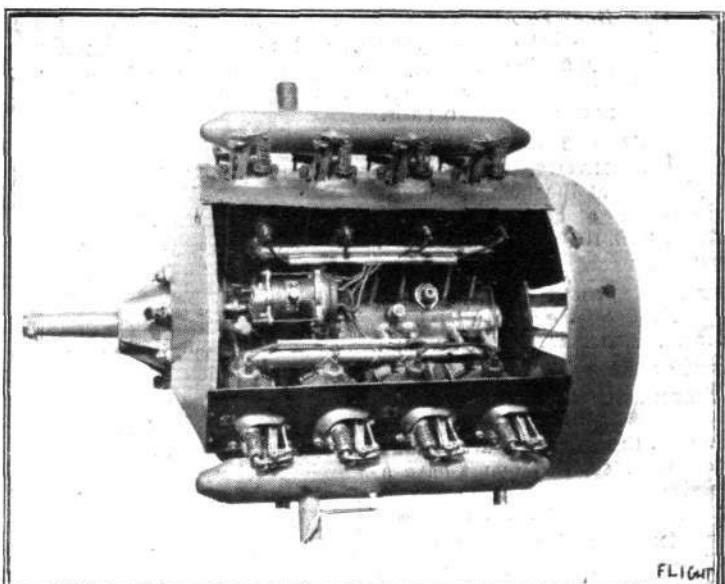
While flying a waterplane in connection with a fête at Auterive, near Toulouse, on Sunday, Chambenoit fell and sustained injuries to which he succumbed almost immediately.

Long Cross-Country Flights by Farman Pupils.

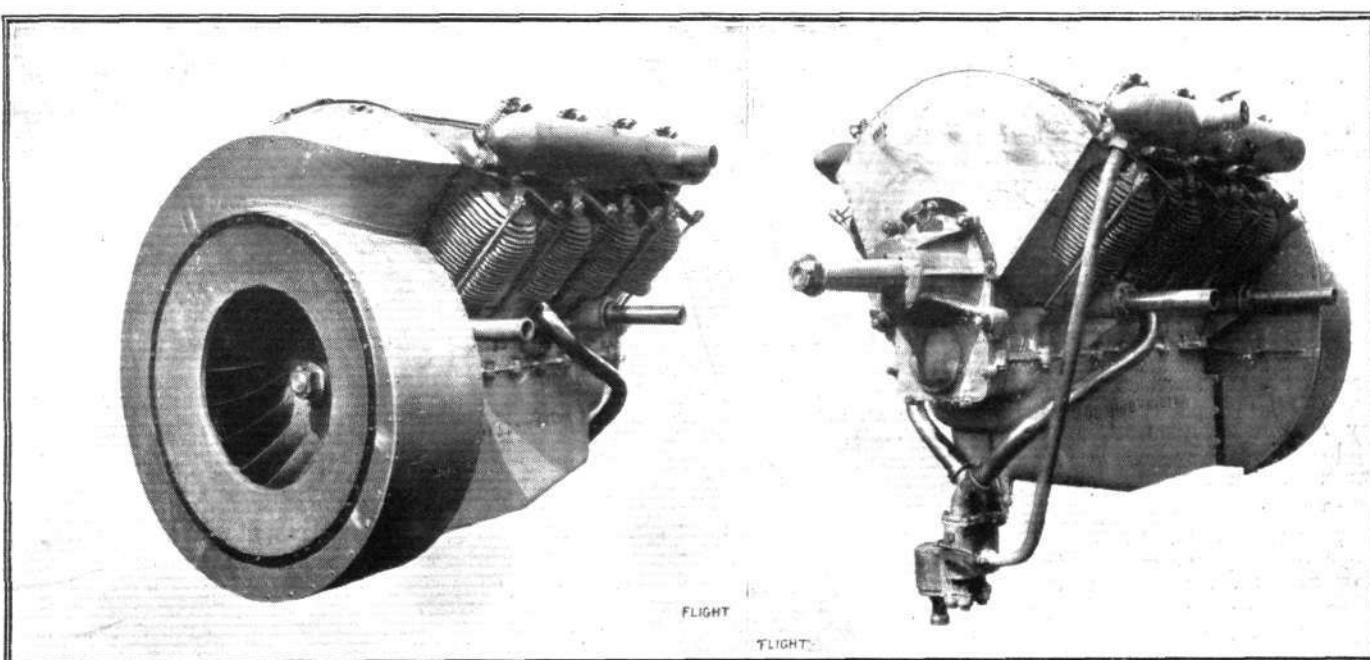
DEBERGUE on a M. Farman and David on a H. Farman on the 23rd ult. flew from Etampes to Mailly Camp, a distance of 150 kilos. They kept at an average altitude of 1,000 metres, and their speed worked out to 105 kilos. per hour.

A New French Prize.

THE Ligue Nationale announce that a prize of £40 has been offered by M. Henry Bonnet for the first French aviator to fly at least 20 kilometres without touching the controls of the elevator, the ailerons or the warping. Steering must be effected by the rudder



FLIGHT



FLIGHT

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THREE VIEWS OF THE 8-CYL. DE DION BOUTON ENGINE.—The bore is 100 mm. and the stroke 120 mm. The cylinders are set at 90 degrees, and are air cooled by the induced draught of a fan. It may be interesting to readers of FLIGHT unfamiliar with the automobile world that Messrs. De Dion have two 8-cyl. V-type engines at present in use on two of their standard touring car models. In this case the engines are, of course, water cooled.

alone, the control of which must be separate from that of the warping or ailerons.

St. Malo Meeting to be Repeated.

In view of the success attained last year, the authorities in the neighbourhood of St. Malo have expressed a desire that another meeting should be held there, and the Aeronautic Committee of the Automobile Club of France is recommending that another meeting should be organised by the Club for next year.

Slack Has a Fall.

STARTING from Villacoublay on Saturday morning with the intention of making a non-stop flight to Hendon, Robert Slack, having got off his course while among the clouds, tried to land between Ostend and Blankenberghe. The machine in landing, however, capsized and was slightly damaged.

Testing a Variable Speed Machine.

AT Miramas, a young aviator, by name Jourjon, is testing a machine invented by M. Bernard de Beer, which is so arranged that the speed of the machine can be varied.

Testing the Borel Aeroyacht.

ON Sunday and Monday Divetain, on the Borel aeroyacht, which he had flown over from La Rochelle, made a series of flights at Les Sables d'Olonne. With a passenger and enough fuel for four hours' flying on board, he made one trip of half an hour's duration at a height of 1,200 metres.

470 kilom. Flight by Hirth.

HIRTH, on an Albatross monoplane with Benz motor, started from Johannisthal on the 25th ult., and flew to Mannheim, the distance of 470 kiloms. being traversed in five hours, while the average altitude was 2,000 metres. The machine carried a passenger. Hirth intended going on to Paris.

A Sign of the Times.

INFORMATION is to hand from Germany to the effect that the authorities at the flying ground at Gotha have decided, in view of the amount of betting which goes on in connection with the flying races, to introduce "totalisator" machines as used at the horse race meetings.

From Berlin to Posen.

ALSO on the 25th ult., Laitach on his aeroplane took Capt. Hachnel from Berlin to Posen, a distance of about 230 kilos, in 3 hrs. 3 mins.

Volunteer Airmen for German Navy.

IN order to expedite the organisation of the Naval aeroplane service, the German Naval Authorities have decided to accept this year volunteers, who must have a Pilot's Certificate, for one year's service.

Cross-country Flying in Germany.

IN connection with a meeting at Dresden on the 23rd ult., Lieut. Echenbrecher, on an Erzgebirge monoplane, flew from Dresden to Bantzen and back in 55 mins.

A German Fatality.

WHILE testing a new monoplane at Johannisthal on the 22nd ult., Wheelmer fell from a height of 100 metres and was killed on the spot.

A Hanriot for Italian Army.

ON the 23rd ult. Bielovucic was testing at the Mirafiori aerodrome, the Hanriot monoplane given to the Italian Army by Baron Leonino de Zara. On Saturday, on this machine he made a flight from Mirafiori to Pinerolo and back.

The Aerial Destroyer.

FROM Nogales, Arizona, comes the information that the Mexican Federal Gunboat "Tampico," lying in Guaymas Harbour, was destroyed by a bomb dropped from an aeroplane piloted by Didier Masson. The gunboat, it is stated, was blown up at the fourth attempt.

A Russian Height Record.

ON a Sikorsky biplane, on the 22nd ult., at the St. Petersburg Military Aerodrome, Lieut. Aleckhnovitch beat Gaber-Vlinsky's Russian height record by going up to 3,400 metres, an improvement of 300 metres. The ascent was made in 24 mins. and the return to earth in 15 mins.

Fast Flying in Russia.

ON a Sikorsky monocoque aeroplane, Jankowsky, the other day, flew from St. Petersburg to Gatchina and back at a speed which was stated to be 159 kiloms. an hour.

Russian Officer Killed.

WHILE making a *vol plané* in calm weather at the Gatchina military aerodrome, on Tuesday, the biplane of Capt. Tsamaja capsized when at a height of 200 metres. The pilot died from his injuries very shortly afterwards.

SCIENTIFIC INSTRUMENTS, THEIR DESIGN AND USE IN AERONAUTICS.

Yaw-meter.

The following is another instrument described by Mr. Darwin in his paper published in FLIGHT recently under the above heading:—

The word Yaw is here used in the sense of "to bend or deviate from a straight course." But the name does not accurately describe what the instrument measures. If the air is at rest, it measures the angle that the direction of movement of the aeroplane makes with its keel, or how nearly it is moving in the direction of its length. Side-slip is thus measured by it. If we consider the aeroplane at rest and the air blowing against it, it measures how nearly the direction of the wind is head on. If an eddy in the moving air meets the aeroplane, the direction of the wind will change and this will be indicated. A wind-vane carried by an airship or aeroplane would also show how nearly the movement was head on in the same way as the Yaw-meter. But the wind-vane would be difficult to read when placed in a position free from eddies in the air caused by the aircraft itself. With the Yaw-meter the dial and hand can be placed in a convenient place for observation.

Two Pitot tubes are made like the letter Y (see Fig. 5, p. 600) with the openings at the tops of the two arms. If the wind blows symmetrically to the two tubes the pressure will be equal in both. But if the direction of the wind changes it will meet the opening at the end of one tube more nearly in the direction in which the tube is pointing, and the pressure will be increased. The opposite will take place in the other Pitot tube and the pressure in it will be diminished.

The pressure from these two Pitot tubes is taken by two pipes to the indicating apparatus, which can be at any convenient distance away. Each tube is connected to a circular box, the top of which is an air-tight flexible diaphragm which can move outwards. A rod is connected to each diaphragm, and these rods are pushed outwards by the air pressure.

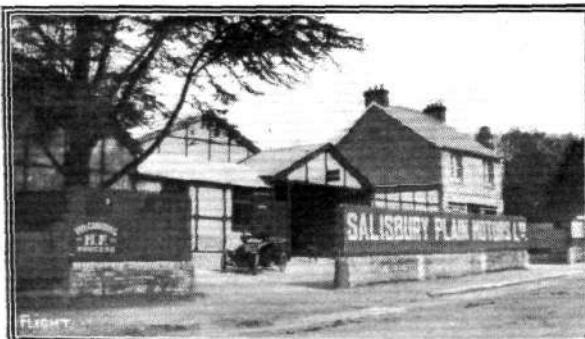
The hand indicating the angle of Yaw, that is the angle at which the air meets the Y Pitot tube, is pivoted about the point O, and is continued to P. At this point it is connected to the two rods from the diaphragms by a freely moving joint. If one rod pushes with a greater force than the other the hand is moved over to one side, and it will come to rest when OP is in the direction of the resultant of the forces with which the two rods are pushed outwards, and when it is in equilibrium the hand will show on the scale the angle of Yaw. If the speed of the aeroplane increases the hand will not move, because the air pressure and consequently the pushing forces in the two rods will both be increased in the same ratio.

The same instrument can be connected to a wind-vane which moves the Y Pitot tubes so as to face the wind. The tubes are arranged to show if the wind has an upward or downward tendency, and the angle between the direction of the wind and a horizontal plane is measured.



Filling a Want at Amesbury.

THE Salisbury Plain Motors, Ltd., write us as follows: "It may be of interest to pupils and aviators in the Salisbury Plain district to know that a new garage has been opened in Amesbury, under the title of Salisbury Plain Motors, Ltd. The directors are Capt. Clutton, who was the original secretary and builder of the Hendon aerodrome, and Mr. Bouwens, who was one of the first pupils to secure his *brevet* there at the Blériot school.



The premises include a workshop fitted with modern machinery, and capable of dealing with all repairs except those of the very largest description, also a large garage with 7 lock-ups, and a very complete stock of engineers' stores as well as the usual petroliums, oils and greases. A stock of Continental, Avon, and Spencer-Moulton tyres are kept, and electric light is installed throughout. The premises are seen in the above photograph. A new departure is the policy of hiring motor cycles and small cars *without* as well as with drivers for long or short periods—a great convenience to those who are quartered at inaccessible points of this very inaccessible neighbourhood."



Edited by V. E. JOHNSON, M.A.

Some Experiments with Models, By PHEROZE E. J.
MINVALLA, A.S.M.

FOR some years past I have carried out a large number of experiments with models, and in case any of your readers would like to avail themselves of the results of my experiments, I set out a few designs, &c., of various machines I have constructed.

Figure A is a dart-shaped monoplane in which the wings are attached to the fuselage in a somewhat novel way. The body

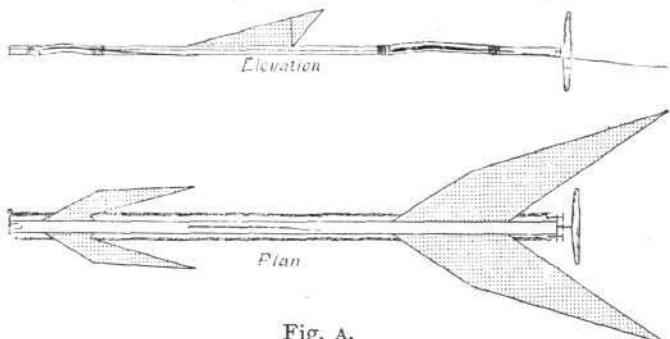


Fig. A.

consists of two spars, but the elevator and main planes are fixed in between the two longitudinals, which are specially bent (Fig. B) to the camber of the wing surfaces.

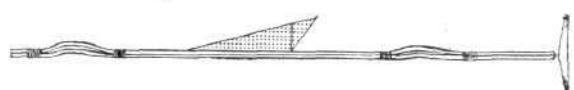


Fig. B.

Figure C shows the plan, end view and blade sections of the carved propeller used on this machine, which has made some good flights. It invariably turns, however to the right. I have fixed

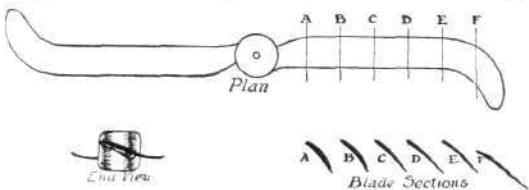


Fig. C.

the rudder to the left, turned the left wing down, and the right up, but it still turns to the right. A noticeable feature is the large angle at which it banks when turning. I can attribute it to no cause. I have taken tracings of both wings; they coincide exactly, their camber is identical; so I do not think there can be any possibility of the trouble arising from that quarter. [Our contributor does not state in which direction the propeller rotates, clockwise or anti-clockwise; in a model of this character we should expect the reaction of a single

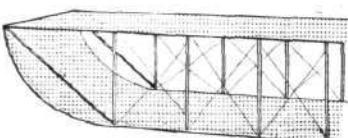


Fig. D.

propeller to be very marked.—V.E.J.] My next model was a biplane of the character shown in Plan D, the lower wing being turned up to meet the upper surface, thus forming a quadrant on either end of the machine's surfaces. This machine was exceptionally stable both longitudinally and laterally, and was practically free from all tendency to dive or oscillate. I am not aware that this idea has been broached by anyone at all, bar Mr. Bragg-Smith, but I think my machine is considerably different from his.

• It appears to me that the stability of this model is due to the following causes. The machine is travelling at a uniform velocity in a certain direction (say) directly at right angles to the wind, which means that the pilot has ever to be on his guard against a side-slip.

if a sudden gust occurred. But in this machine the dangers of a side-slip are minimised to a great extent, for this reason. If the machine is blown sideways and downwards, the air pressure on the curved surface nearest the ground would to a considerable degree break the rate of descent, and the upper curved top end (being brought down at such a speed), would consolidate the air under it, and so create support for the machine. Hence any tendency to bank over too far is immediately checked. In the case of small oscillations, for a similar reason they are prevented [not prevented, but damped out.—V.E.J.], the foregoing accounting for the steady flights I have had with this machine.

[The stability of the Bragg-Smith model is attributed by its inventor to the following causes. The top plane is approximately straight, the lower plane having its end curved up to meet the upper. Thus when the machine is tilted laterally by a side gust a greater projected area of sustaining surface is presented on that side of the machine which is lowest, while the opposite side assumes a more or less vertical position, with the result that the sustaining effect on that particular side is decreased, the machine automatically regaining its normal position. The above functions being performed by the lower curved plane, the especial function of the upper being, not only to provide adequate sustaining surface, but to damp out the lateral oscillations, which he found to occur when a single curved surface is used. The longitudinal stability is attained by setting the small surface (elevator) at an angle of incidence of about 5° to the main planes.—V.E.J.]

Figure E, Nos. 1-6, shows a selection of paper gliders with which I have experimented.

No. 1. This is made in 3 parts: body, wings, empennage. Part 1 is made by cutting out of a thick piece of paper (I find the backs of stiff exercise books answer admirably), and folding a narrow double strip of the length required, then shaping it into a streamline form by joining the two front and rear ends with some stamp paper hinges.

Then slots are cut of the required camber through both sides, and the wings are slipped through and fastened with hinges similarly for the empennage. In this way I find you can best test the various

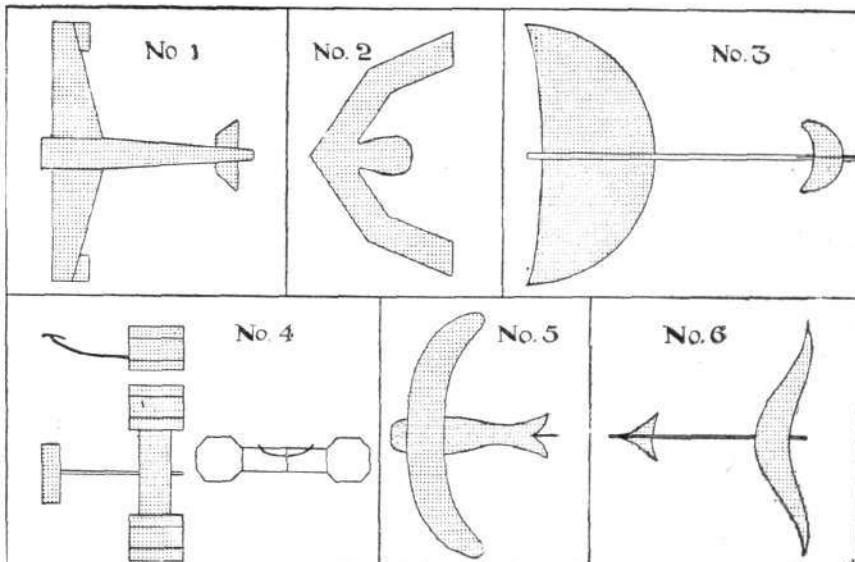


Fig. E.

wing shapes (the best being the one given in Plan E, No. 1), and various other factors.

This model was extremely stable laterally, but would dive, when launched from about 6 ft. to within 2 ft. from the ground, and then flatten out and glide for 8 to 12 ft. All these experiments

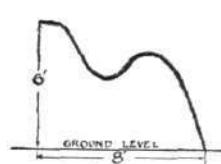


Fig. F.



Fig. G.

took place, I may say, in a closed room, with few, if any, disturbing currents.

No. 2. I received the idea of this machine from an article in your valuable paper re the Dunne aeroplane. This has a considerable camber at the apex, less at the first joints, and a negative angle at the extremities. This would *vol pancake* when released from a height of 6 ft., and flown horizontally; when launched at an incline of about 45 degs. it would dip and rise for about a dozen yards. When there was a negative angle to the planes; but on their having a positive angle and under the same conditions as the last experiment, it would form an "S" in its flight towards earth—that is, as per diagram Fig. F—every time.

There were no distinctive flights made by No. 3, so I will pass on to No. 4. This machine is a biplane. (I must acknowledge my indebtedness for the idea of this to Mr. Mateyka, of Kensington, from whose patent I evolved this form.) It consists of two surfaces, the ends of which are made to join octagonally, including the panel in each. There is one further panel in the middle to which is attached the elevator boom. This is a remarkably steady and safe machine; it has no camber, but the elevator is a broad \sim shape aerofoil.

The idea of No. 5 is taken from the Handley Page monoplane at Hendon. This is a very swift machine, it dives and soars in a very peculiar fashion. Its most remarkable flight was a spiral *vol plan* from a height of about 12 ft. I found in launching it I had knocked a weight out from one side, and in consequence it flew in circles, ever decreasing in diameter until it landed almost under its starting point.

No. 6 is to all appearances an ordinary monoplane glider. However, there are certain points in it I would like to point out.

The fuselage is a thin strut of ash, the wings are paper, but of ichthyoid form, viz., instead of the lower surface curving in the same direction as the upper it bends in the opposite way. Fig. G: I do not know if anyone else has thought of making built-up wings for gliders, but in case some would like to try, I will specify the method I have adopted. First cut out as many pieces of the required shape as are necessary for keeping the wings in shape. Next cut out a piece of paper for a surface, then gum at equal distances the pieces you first cut out, so that when it is dry you will have half of the surface covered, and the other half showing the ribs. Then when the top is quite dry, gum the other edges of the ribs, and put on top the other surface. In cutting out these surfaces be sure to see that they are of the same length, and also longer by about $\frac{1}{4}$ of an inch than the width of the plane. Further, see that the top surface is brought right up to the middle of the ribs—that is, the chord and the front edge of the plane should be \perp . Then stick the lower surface in such a way that the extremity of the plane just reaches the extremity of the ribs. Then there will be $\frac{1}{4}$ of an inch of paper to overlap at either end, and thus makes up a neat piece of work.

So far as the flying capabilities of this design are concerned, I have not so far been able to test it, but I shall be glad to let you know later on what the results are.

Some Further Notes on Steam Plant Models.

Mr. H. G. Stevens writes us as follows: "I note with pleasure that my note on Steam Plants was interesting enough for publication in FLIGHT. At the time of writing, my new steam-driven monoplane, except steam plant and wing coverings, is complete. It weighs $17\frac{1}{2}$ ozs., and with the planes silk surfaced, will total some 19 ozs., which I think is not too heavy. The planes and elevator are those used on my old machine, but are to be recovered and strengthened by two additional longitudinals in each wing. The wings are of 12 gauge steel wire, and are very light (6 ozs. the two), a strong and not too flexible area of main plane, 504 sq. ins.; elevator, 84 sq. ins. As regards my new plant, the engine is finished, and is $\frac{1}{2}$ in. by $\frac{1}{2}$ in. as before, but is made in cast iron, and weighs, minus propeller, 12 ozs. No packing is used; a brass ring is fitted in the piston. It runs well, and is at present used in a small racing boat, which it drives when 'all out' at quite eight miles an hour. The blow lamp is also finished, and has been tested and works very well, giving a hot flame of good size. It is made of $\frac{1}{4}$ in. brass S.D. tube, about 3 ft. being used. The [boiler] coils are not yet made, but will be of $\frac{1}{8}$ in. steel tube as before; length, 8 ft. I note you recommend me to use a pump for feeding the boiler. I did make a pump for my old plant, but it was never tried. I estimate that a water tank 6 ins. by $1\frac{1}{2}$ ins. of S.D. brass tube $\frac{1}{2}$ in. thick would weigh 8 ozs., and a pump and all gears 4 to 5 ozs., so I think I shall use a pump. I have designed one from Mr. H. H. Groves' articles in the *Model Engineer*, and have already made the 4 to 1 gear, and the variable stroke crank disc. The proposed pump is $\frac{1}{2}$ in. bore by $\frac{1}{2}$ in. to $\frac{1}{4}$ in. stroke (variable). I note Mr. Groves attains a 32 oz. thrust 'all out,' so I think my new plant should give 16 ozs. thrust fairly easily. I estimate the weights as follows; those marked with a * are actual: Machine, minus wing covering, $17\frac{1}{2}$ ozs.*; wing coverings, $1\frac{1}{2}$ ozs. Engine, 12 ozs.* Pump and

gears, 4 ozs. Boiler coils, $7\frac{1}{2}$ ozs., this being actual weight of the 8 ft. coil quoted above. Casing and asbestos, 3 ozs. Lamp, 3 ozs.* Water and petrol, 4 ozs. Propeller, $2\frac{1}{4}$ ozs. Total, 54.75 ozs.—i.e., 3 lbs. $6\frac{3}{4}$ ozs. approximately. Loading, approximately, 13 to 14 ozs. per sq. ft.

"I fully intend to test this machine thoroughly with its wings on, and of course will let you know results, which, I hope, will be obtained in about 4 weeks' time. In conclusion, I wish to thank you for the encouragement I obtained from your notes on my former letter."

We stated Mr. Stevens' former plant weighed 1 lb. 5 ozs.; this, it appears, should have been 1 lb. 15 ozs.

Mr. R. V. Tivy writes: "Referring to the description of my steam plant and the 'Weiss' type model, on which it is to be tested, the weight of model given, viz. 14 ozs., does not include rubber, gear bracket and cowl, also tractor screws, total weight 7 ozs. The total weight lifted by 2.5 ozs. of rubber being thus 21 ozs. The tubular boiler has been tested up to 120 lbs. pressure, and the safety valve will blow out at 65 lbs. pressure, so I do not think there will be any risk of its bursting. However, Messrs. Palmer and Co. are building me another tubular boiler of more efficient design, and this should be ready for tests in about a week's time.

"The 16 ozs. includes 3 ozs. of water and fuel, and you know that this is a much lighter plant than that of Mr. Groves. The total weight of the model and power plant, with water and fuel for 2 mins., should be under 30 ozs."

The mere weight of the plant, as stated by Mr. Tivy, has, of course, absolutely nothing to do with the question of efficiency. One of Mr. Groves' plants gives a static thrust of 32 ozs., its own weight, and will fly a 4 lbs. model for which a 24 ozs. thrust is ample when loaded for a 2 mins. run; another plant which he constructed weighed 9 ozs., and gave a static thrust of from 6 to 8 ozs., according to how the pump stroke was set. When loaded with fuel and water for 1.5 mins. run, the complete model weighed only $17\frac{1}{4}$ ozs. This model unfortunately came to grief in its very first flight, owing to its hitting an obstacle, and breaking the fuselage in two. It has not yet, we believe, been repaired. In the case of every type of model: yacht, model locomotive, mono-rail, aeroplane, &c., there always is some particular weight, size, &c., which gives the best results. In the case of mono-rail models, the writer finds this to be about 2.5 lbs. Mr. Groves considers for a steam-driven model aeroplane some 3 to 4 lbs. a very suitable size. When one comes down below a certain size and weight in any form of model work, one always finds the mechanical difficulties increase out of all proportion to the results obtained. Personally, however, we are glad to see that Mr. Tivy's plant is not of the same type as Mr. Groves'; the more types tried the better for our knowledge of the subject.



KITE AND MODEL AEROPLANE ASSOCIATION

Official Notices.

British Model Records.

Hand-launched	Distance	R. Lucas	590 yards.
	Duration	J. E. Louch	100 secs.
Off ground	Distance	L. H. Slatter	365 yards.
	Duration	A. F. Houlberg	80 secs.
Hydro, off water	Duration	J. E. Louch	45 secs.
Single-tractor screw,	Distance	F. G. Hindsley	173 yards.
hand-launched	Duration	J. E. Louch	68 secs.
Do., off ground	Distance	L. G. Tucker	148 yards.
	Duration	J. E. Louch	45 secs.

Official Trials.—The usual monthly official trials for the purpose of registration and establishing records took place on July 26th, on Wimbledon Common. The official observers were Messrs. C. Davies and W. H. Akehurst. The results were as follows: Hand-launched, duration—J. E. Louch, 100 $\frac{1}{2}$ secs.; hand-launched, distance—R. Weston, 522 yards; off ground, distance—L. H. Slatter, 335 yards, L. H. Hutcheon, 237 yards; single-tractor screw, distance off ground—L. G. Tucker, 148 yards. There were 11 entries but the machines were not tuned up, therefore no other results can be given. But by the above it will be seen that the hand-launched duration record of 89 secs., held by A. F. Houlberg since Whit-Monday, 1912, has at last been raised, and the record now stands at 100 secs. The distance record (off ground) being captured by L. H. Slatter with 365 yards, the previous best being held by C. C. Dutton with 296 yards. A new record was established by L. G. Tucker, with single-tractor screw, distance off ground, with 148 yards. There had not been an official record in this class.

Hydro Competition.—All entries should be sent in by to-day (Saturday) for the Royal Aero Club's competition, which takes place on August 9th, at the Welsh Harp, Hendon. For details see last week's official notices.

Displays.—A team of members attended by invitation the Mayor of Poplar's Garden Fête on July 24th, with the result that the demonstration was much appreciated, and the Mayor has tendered his thanks to the team for their kind services.

Competitions.—Burton-on-Trent Meeting. There will be a keen contest for the championship of the Midlands, 31 entries having been accepted. The judges will be on the ground and start the competition at 11 a.m. prompt, therefore all competitors are asked to tune up their machines before that time, as the time-limit will be strictly enforced owing to the number of spectators who will be present to witness this contest. Messrs. G. Haddon-Wood, of Birmingham Aero Club, C. F. Cudworth, of the Sheffield Aero Club, and W. H. Akehurst, will act as judges.

Littlehampton Meeting. As entries will be accepted on the ground, all intending competitors who have not sent in their entries should report themselves to Captain Bateman and Mr. Lanchester as early as possible after arrival.

Model Competitions.—At the London Aerodrome, Hendon, August 13th, at 2.30 p.m. Entries close first post August 6th. Free to members; non-members' entrance fee, 2s. Efficiency competition for the London Aerodrome Model Challenge Trophy for models rising off the ground.—Prizes: 1st, the London Aerodrome model challenge trophy and silver plaque (presented by Claude Grahame-White); 2nd, silver medal of the Association; 3rd, bronze medal of the Association. Judged on efficiency test. Rules: 1. Competitors may submit models of any kind. 2. Models must not weigh less than 4 ozs. 3. Competitors must be at the judges' flag at 2.15 o'clock. Those not present at that time will be disqualified. 4. Models to be timed from time of leaving ground till time of landing, or till they disappear from the observer's view. 5. Competitors will not be allowed to replace any part (or parts) without the permission of the judges. 6. Each competitor is entitled to three trials if time permits.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Hon. Sec.

AFFILIATED MODEL CLUBS DIARY AND REPORTS.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Aero-Models Assoc. (N. Branch) (25, CHURCH CRESCENT, MUSWELL HILL, N.).

PRIVATE Flying Ground, Five Bells Fields, Bishop's Avenue, E. Finchley, N. August 2nd, at Finchley; return match with Paddington A.C.; 9th, visit to Welsh Harp for R.A.C. hydro competition; 16th, practice; 23rd, r.o.g. practice; 30th, K. and M.A.A. record trials.

Indoor meetings fortnightly.

Monthly Report.—During July the new rising surface has been much in use, and owing to competitions, &c., twin screw machines have been to the fore. Mr. Root and Mr. Murray, with tractors, have made excellent flights. Mr. Brown, of the Hendon M.A.C., with a 1-1-0-P₁, got good duration. Messrs. Coleman, Bond, Fletcher, Hindsley, Partridge, Murray and Kerry flying loaded elevator machines; Messrs. Clafin, Pidsley, Bond, Ross, Hindsley and Hancock machines of the floating-tail type. The following new machines have made their appearance:—Mr. Bond's r.o.g. 4 oz. 1-1-0-P₂, curved propellers. Mr. Fletcher's new 1-1-0-P₂ covered over 400 yards on its first trials. Mr. Partridge's loaded elevator r.o.g. commenced its career by winning the open competition on the 12th with 57 $\frac{1}{2}$ secs. r.o.g. Mr. Pidsley's r.o.g. 0-1-1-P₂, with new plane fitted on 12th, climbed and glided well. Mr. Ross's 4 $\frac{1}{2}$ oz. 0-1-1-P₂ came to grief before the competition. Mr. Hancock's 4 oz. 0-1-1-P₂ went well outside the ground. Competitions, &c.:—Result of the inter-club contest with the Paddington A.C., July 5th, on their ground. A decisive defeat for our men. Paddington av. 75 secs. r.o.g. A.M.A. av. 57 secs. r.o.g. The open competition at Finchley, July 12th, resulted in win for G. O. Partridge (A.M.A.), 57 secs. r.o.g.; second, C. C. Clafin (A.M.A.) 49 secs. r.o.g.; third, G. Pidsley (A.M.A.), 37 secs. r.o.g.; fourth, J. Dodge (Hendon A.C.), 36 $\frac{1}{2}$ secs. Messrs. Brookes, Ross and Hindsley judging. On 26th, an inter-club contest with the Hendon and District M.A.C., at Finchley, resulted in win for A.M.A., with average of 45 secs. r.o.g. As members are not sufficiently in touch with one another at present to derive the full benefits of association with the club, the Saturday meetings will be augmented by indoor meetings for discussion on definite subjects, comparison of work, &c. The opening meeting was held on 23rd. The club library and information bureau now in working order. The club will be exhibiting at the *Model Engineer* Exhibition in October, and members are advised to start on their show models in good time.

Hendon and Districts Model A.C. (48, BERTRAM RD., HENDON).

Monthly Report.—There is a remarkable improvement to report this month in both the construction of models and in the style of flight obtained. Mr. Hills has continued experiments with single-screw "Tryke" type models, and on the 27th he broke club's record for this class, held for nearly a year by Lawrence, with 40 secs. Mr. Hill's durations were 39 secs., 53 secs., and 77 secs., of which 35 secs. was occupied in a *vol plan*, the power having run out at an enormous altitude for a model. This flight constitutes new club record for duration in any class, the former record being 70 secs., held jointly by Messrs. Lawrence and Dodge. Mr. Hedges has been busy in his nicely fitted workshop and has obtained good flights with a very speedy r.o.g. machine, and also a 0-1-1-P₂ hand-launched. Messrs. Lawrence (0-1-1-P₂ r.o.g.), Mitchell (0-1-1-P₂), Dodge (0-1-1-P₂ r.o.g.), H. G. Hills (1-1-0-P₂ and 0-1-1-P₂), Hayward (night flying with single-screw), Brown (single-screw model) and Short (0-1-1-P₂), all have been making good average flights. On the 26th, a team of three was sent to Finchley to represent the club against the A.M.A. (Northern), but owing to a series of misfortunes, put up a very poor show, the A.M.A. team winning easily. Please note secretary's change of address.

Leytonstone and District Aero Club (64, LEYSPRING ROAD).

AUGUST 2nd, flying 6.30 a.m., Model Yacht Pond; at 10 a.m., near Birchfields.

Monthly Report.—Interest in July has centred chiefly round hydro's, although a great amount of work has been done with r.o.g.'s and hand-launched models. As reported last month, Mr. Grattan succeeded in flying his hydro from the water, he being the first member to accomplish this. The following week-end Mr. H. Bedford and Mr. F. Hawthorn each obtained good flights with their waterplanes, the latter on one occasion obtaining 23 secs. off water. Mr. H. Bedford has cleverly combined wheels and floats. The model will rise from rough water with the wheels immersed, but when the surface is smooth, the wheels have to be drawn up out of the water, or it will not get off. The same machine rises well from the ground. Mr. Grattan has constructed an 8 oz. single-screw (pusher) hydro. Messrs. Ludlow and W. Herson have obtained good hand-launched straight flights, and Mr. C. Herson with r.o.g. had good durations. Other work by Mr. L. Cheminant (hand-launched), Mr. F. Woods (small tractor and r.o.g.), and Mr. G. Pitt (r.o.g.). On the 26th, some members of the North East London Club paid us a visit, Mr. Bond, with a clever "tail behindier," treating us to 90 secs. off ground.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

AUGUST 2nd, club members visit Aero Models Association's ground at Finchley, to take part in three-cornered inter-club contest; Aug. 4th, club will be represented at Littlehampton. At home, another r.o.g. handicap will be held. Members' performances will also be eligible for certificates, the test being 30 secs. duration.

Reigate, Redhill and District (THE COTTAGE, WOODLANDS AVENUE, REDHILL).

JULY 2nd, flying on Earlswood Common.

Monthly Report.—During the month a good amount of flying has been done, and members have also been busy in workshop on some new machines, the younger members coming well up to standard—two of them bringing out two very pretty little biplanes, one r.o.g. and the other a hydro. Results of Novices Competition on the 19th: Mr. Hooton first, with 34 secs.; Mr. Greenhead second, 33 secs., and Mr. J. Hoyle third, 22 secs. On the 26th the club gave a fine exhibition at sports at "Frenches," Redhill, in a tent; 24 machines of various types were shown, and good flying was done, terminating with illuminated flying. Mr. Kay, with his various machines, has done over 300 yards with 4 oz. r.o.g. biplanes. Mr. J. L. Sutton made his *début* with new 3 $\frac{1}{2}$ oz. floating-tail H.L. mono, which "landed" on large elm, after fine flight of 300 yards. He has also been out with 2 $\frac{1}{2}$ oz., 5 oz. and 20 oz. H.L.; getting over 100 yards with tractor mono. Mr. Hooton tuning up 4 oz. r.o.g. biplane and 7 $\frac{1}{2}$ r.o.g. mono, getting 300 to 350 yards with 4 oz. H.L. Other work by Mr. J. Hoyle (9 oz. r.o.g. biplane, 200 yards, and testing different propellers on 4 oz. r.o.g. mono), Mr. Greenhead (320 yards with 7 $\frac{1}{2}$ oz. r.o.g. mono, and 42 secs. with 4 oz. H.L. mono), Mr. M. H. Wilson (8 oz.), Mr. Oram (150 yards with 7 oz. r.o.g. mono), Mr. Burghope (9 oz. r.o.g. biplane), Mr. Norton (9 oz. r.o.g. biplane, and 2 oz. and 4 oz. H.L. monos), has been paying attention to 8 oz. tractor which has been converted into a hydro.

Sheffield Aero Club (35, PENRHYN ROAD, SHEFFIELD).

AUGUST 2ND, members leave club room for Burton-on-Trent at 2.30 p.m. (those who are cycling) to take part in the aviation week. A tent, &c., has been fixed up adjoining the aviation ground, for the members.

Monthly Report.—July 14th, at general meeting, it was decided to alter the title of the club from Sheffield Model Aero Club to the above name. In future, in addition to the President's Challenge Cup for hydro-aeroplanes, a certificate will be given to the member winning the cup each time. July 26th, the hydro-aeroplane contest was held at Tinsley, for the President's Cup, in ideal weather, but none of the four machines fulfilled the necessary 30 secs. duration, the entrants being Mr. H. Slack, Mr. J. P. Worrall, Mr. W. H. Bagshaw, and Mr. G. H. Dewsnap. Mr. Bagshaw's machine did 15 secs. on the last attempt, this holding the Sheffield, and thus beating the previous record held by Mr. Worrall. The judges were Mr. C. F. W. Cudworth and Master C. Dewsnap.

Wimbledon and District (165, HOLLAND ROAD, W.).

AUGUST 1st and 2nd, flying as usual. On Bank Holiday, members are flying at Burton and Littlehampton meetings, and there will be the usual flying on the Common. A competition for r.o.g. duration models will be held on August 9th; prizes and time will be announced next week.

Monthly Report.—No competitions have been held during past month, but in the K. & M.A.A. for r.o.g. steering, Mr. L. H. Slatter took second place, and Mr. F. Whitworth third. Members have also been very successful in the monthly trials held on Wimbledon Common on 25th, when Mr. Slatter raised the off ground distance record to 365 yards, and Mr. Tucker put up a tractor off ground distance record (figures not yet to hand). This machine is 4 ft. 6 ins. overall, and its chief feature is the pair of blisters projecting on wire skids in front of the screw. On July 13th, Mr. Slatter raised the hydro record to 45 secs. with a fine flight, the machine being of same type as that with which he took first prize at the hydro competition on June 14th. R.o.g. models have been flown by Messrs. Whitworth, Waghorn, Laing, Hutcheon, Beazley, Conolly, Wilde-Smith and others, and several new machines have been out. Hand-launched machines have not been neglected, one of the most interesting being Mr. D. Easdale's single-screw of the 0-1-1-P₂ type. On this model the plane is fastened to the frame by the leading edge, only the trailing edge being free to adjust itself in flight, which it does with good effect, the machine climbing and flying well. Several members have tried to raise the hand-launched duration record, but without success, though some very fine flights have been made, the best being Messrs. N. Waghorn with 81 secs., F. Powell with 79, and F. Wilkinson with 75. On three occasions, illuminated flying has been carried out by Messrs. Laing, Conolly, Rice and others with great spectacular effects. During the second week of the month Messrs. Tucker, French, and Hutcheon flew at a garden party with great success, though owing to the small space available several models roosted in trees. Hand-launched machines have also been flown by Messrs. Whiteland, Few, Smith, Beazley, Eady and Rice.

UNAFFILIATED CLUBS.

Brighton and Hove (59, WESTBOURNE GARDENS, HOVE).

AUGUST 2ND, hydro trials at Overflow, 10.30 a.m., Meeting at Jack Field, 3 p.m.

Monthly Report.—Members have been very active this month. It is pleasing to note that most of the models brought out have been made with a purpose other than the mere aimless achievement of distance or duration. Mr. Williams has been flying a r.o.g. tractor biplane intended to demonstrate a new type of stabilising fin; very high and stable flights. Mr. Hervey, numerous 1-1-0-P₂-0 models with ingenious fuselage constructions; on several occasions he did over 500 yards and 60 secs. He was also flying a large tractor monoplane. Mr. Young with twin-screw hydro of unusual type—0-2-P₂-1. Mr. Kerruish experiments to determine the value of "K" in loading-speed empirical formula. He is building a turbine motor, propelled by ferro-chlorate blasting powder. Similar motor built in 1912 a great success.

Croydon and District A.C. (158, HIGH STREET, CROYDON).

Monthly Report.—Members busy during July with models of all types. With hydro monoplanes, Messrs. Bell, Smith and Hart have had good results. Mr. C. Smith some good distance flights with his hydro with cambered floats. At Denver, Norfolk, Mr. Hart with an r.o.g. hydro has had flights of 31 secs. off water and 34 secs. off land. Mr. H. Smith, now back at Croydon, has had splendid flights with his large surfaced monoplane, and his tractor monoplane. Mr. W. Mullins, some big duration flights with his r.o.g. model. His model has Caudron pattern main plane, and flies at a great height, and is very stable. One of the best performances of the month was the flying of Mr. W. Bell's single-screw model. He has had splendid distance and duration. Weekly competitions start next month, and details will be announced in FLIGHT from time to time.

Manchester Model A.C. (14, WARWICK RD. N., OLD TRAFFORD).

Monthly Report.—Weather during last month ideal for flying, enabling excellent progress to be made. Mr. Monteiro, with tractor, has obtained 235 yards hand-launched, 135 yards and 34 secs. off the ground, and has been within 2 secs. of the hand-launched record. He is going to Portugal for a few months, the club thereby losing temporarily its most energetic member. Others having good results with tractors have been Messrs. Broadhurst, Gilbert, Monteiro, Kenworthy, Jackson, and Watson with r.o.g. machines. Mr. Watson passed for his second and first-class certificates, raising the duration record to 40 secs., and Mr. Monteiro for his third-class certificate. A few of the members have been flying hand-launched models and Mr. Huntingdon succeeded in passing his

second-class tests. At present special attention is being paid to the design of propellers and planes, and it is hoped that something useful may be evolved.

Scottish Ae.S. ("ROCHELLE," LIMESIDE AVENUE, KUTHERGLEN).

AUGUST 2nd, 9th, 16th, 23rd, 30th. Maxwell Park Pond. Hydros and tractor tests.

Monthly Report.—On July 2nd, Messrs. Balden and Foster visited Whiteinch Pond for the purpose of testing hydros. Mr. Balden's machine got off very sluggishly at first, but later on he had a few good flights and finished evening with three hand-launched flights. Mr. Foster's model underpowered, and on making a second attempt, smashed one of his propellers owing to the clumsiness of the spectators. On 5th, Mr. Foster at Maxwell Park with hydro, had a good afternoon's flying. Mr. Graham has just completed in the workshop a twin-cylinder opposed type of engine for compressed air, the engine weighs 3 ozs. Will members please note that meetings are being held, and those who are at home might make an endeavour to appear, and support the committee who are doing their utmost to interest them.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

FLYING MEETINGS: August 1st, Blackheath, 7.30-10 a.m., Mitcham, 2.30-5.30 p.m.; August 2nd, Kidbrooke, 2.30-5.30 p.m., Woolwich Common, 4.30-6.30 p.m.; August 3rd, Blackheath, 7.30-10 a.m., Lee Aerodrome, 10.30-12.45 p.m., Mitcham, 2.30-5.30 p.m.

Monthly Report.—By far the outstanding feature of the month's work was the magnificent performance of Mr. H. H. Groves' steam-driven monoplane. This machine made five or six perfect consecutive flights, and as a *grand finale* a flight of about half a mile. At commencement of the flight the boiler only contained 2 ozs. of water (the total capacity being 7 ozs.), and the engine was still running when the machine was found in chestnut tree. Mr. Chinery's huge gull-wing tractor mono. "Bluebell" is one of the sights of Blackheath. In point of size it is run very close by Mr. Westwood's tractor, which, unfortunately, refuses to rise off the ground, although it is splendidly efficient when hand-launched. Mr. Hunt has been successful with his r.o.g. "A" frame mono., with average duration about 45 secs., and in an officially timed flight 60 secs. (out of sight) was obtained. Smaller replicas have been made and successfully flown by Messrs. Peters and Hock, who have also constructed tractor monoplanes, the former's being of a considerable size, while Mr. Hock's is fitted with a set of gears. A twin-propeller biplane, constructed by Mr. G. Brown, has been showing remarkable speed, the double-surfaced planes (previously described in these columns) again proving their efficiency. Mr. Brunton has altered his tractor biplane to a mono. Other tractor monoplanes have been flown by Messrs. Nicholls and Atwooll, the former's fitted with a "G.B." double surfaced plane, and the latter's with a "Levasseur" type screw. Mr. Clark's small 2-oz. racer has been flying with its usual regularity at Blackheath, Grove Park, Kidbrooke, and the Lee Aerodrome. Extreme activity has also been displayed on Woolwich Common, by Messrs. Morgan and Jones, the former with an "A" frame mono., and the latter with a single propeller r.o.g. monoplane, other flyers being Mr. Dixson, small "sparrow" tractor; Mr. Grimstone, twin-propeller floating tail mono., and Mr. McLoughlin's single propeller model. Unfortunately nobody was able to complete the tuning up of their 16-oz. tractors in time for the first round of the "South Eastern Trophy" competition (the rules of which were published in last week's FLIGHT). Several members almost succeeded and from the advance reports it is certain that on the next day reserved for the competition (August, 30th) the 5 per cent. allowance will not go begging. The Lee and Kidbrooke Aerodromes are now fit for use, but attention is called to the fact that a new and larger field has been obtained at Kidbrooke, particulars of which can be obtained from the hon. sec.

Stony Stratford and District Kite and Model Ae.C. (OLD STRATFORD).

NEXT meeting at Wolverton, the subject being "Propellers." The most important business will be the alteration of the basis for record flights, so as to include every type of model.

Monthly Report.—Three or four members have been out of late, the most notable performance being Mr. E. Brown's successful attempt to raise club record from 216 yds. 1 ft. to 256 yds. 2 ft.; this has been laying at 216 yards for thirteen months for attempts. Mr. R. Elmes has again returned to his favourite type, namely, single propeller boat-shaped fuselage, and has made some very successful flights despite the usual circling. The secretary has also turned out a 5 oz. machine with a boat-shaped fuselage with a plane *à la* Etrich, which has also the circling failing, the best flight straight only being 202 yards. After an idle time and also a thorough overhaul at the hands of Mr. R. Elmes and the secretary, the glider was brought out for an adjusting flight and towing practice, and the towers were able in a 10-mile wind to reach 50 ft. The prospects are now brightening very much, but the club is seriously handicapped for support from local gentlemen, and this has kept back arrangements for a competition programme, as the expenses have been very heavy this season.

Windsor Model and Gliding Club (10, ALMA RD., WINDSOR).

Monthly Report.—The month has seen quite a lot of model flying. Although the types have been many and varied, the tractor is still conspicuously to the fore, and compares very favourably with the large racing monoplanes in both distance and duration classes. Messrs. Camm, Dousett, Stanbrook, Vevers, Dandridge, F. Camm and Rogers have all participated. On one occasion illuminated flying attracted a large number of spectators. Mr. Rogers has made a huge tractor of 5 ft. span, weighing about 2 lbs., and some fine flights have already been achieved. It has been decided to offer a trophy, to be competed for quarterly, the first contest being for tractor biplanes. The glider has not yet been tried, but it is hoped to have it out on Bank Holiday, if at all suitable. Numerous improvements have been made, notably in the axle and suspensions.

⊗ ⊗ ⊗ ⊗ ⊗ CORRESPONDENCE.

Committee Elections.

[1772] The question of the principle which should govern the election of committees is an important one, and I am glad to see that you are throwing your columns open to its discussion.

Are the members of a society or club to be free to elect as their committee those and those only whom they desire to represent them, or are they to be practically compelled to vote for the candidates whom the committee itself puts forward? This is the kernel of the matter.

If the committee prepares a balloting list of, say, 15 names, and it is obligatory upon every member who ballots to vote for 10 candidates, no more and no less, under pain of his voting paper being

cancelled, the result is not likely to be the same as if each elector were free to vote for one, two, or more up to, but not exceeding, 10 candidates.

Moreover if certain electors desire to see on the committee a man whose name does not appear on the official list of candidates, what chance have they of success? All the votes given to this particular candidate will be votes of those only who desire to have him as a representative—no other votes will be cast in his favour; but the official candidates will receive, in addition to the votes of those who wish them success, a multitude of votes from electors who vote for them just because they are *bound* by the rules to vote for as many as 10 candidates whether they consider them qualified or not.

Under such a system of election the number of votes a candidate receives can be no real index of the wishes of the electors.

The instance you give of the working of the "proportionate" system of voting surely represents that system in a most unfavourable light. "The three candidates" are entitled under "an established right" to an equal share apiece in the votes of the electors, and it becomes the duty of the electorate to show no more favour to one than to another, but to give each of them the *same* number of votes. The electors under such rules are reduced to mere registering machines, and the election could equally well, and with less trouble and expense, be carried out by the secretary giving each candidate as many votes as there are electors. I am convinced that the Royal Aero Club has done the right thing, even if it has done it "unwittingly."

Westminster, S.W.

CHARLES T. WALROND.

Dirigible Airships.

[1773] The graphic description of the wreck of the "Schuette-Lanz" rigid dirigible airship at Schneidemuehl which has recently appeared in the papers illustrates in a forcible manner the necessity of keeping an open mind on the question of the respective merits of "rigid" and "non-rigid" types of airships.

The chief lesson to be learnt, however, seems to be that whatever may be the advantages of the "rigid" system, airships of this type must continue to run great risk of disaster until a more ample supply of air-harbours is available. For the present, therefore, non-rigid (which, if caught by a storm when at anchor in the open, can be deflated) would seem to have a very valuable advantage in this respect over "rigids," which cannot be deflated.

It is important that the public should understand that a wreck of this sort is due to causes just as preventable as would be the wreck of a ship obliged to anchor on a rocky coast from want of a harbour, and should not be led into thinking that it is another proof that "airships are no good."

39, Lombard Street, London, E.C.

E. C. POWELL.



Ballooning Over London.

MR. EDWARD WRIGHT, accompanied by Mr. Arthur Spencer, on Monday last made a splendid balloon trip in "The Mascot," (35,000 cubic feet). They ascended at the Old Welsh Harp, Hendon, and passed over the Park and West End of London, descending very gracefully at Staines.

⊗ ⊗ ⊗ ⊗ ⊗ PUBLICATIONS RECEIVED.

Bulletin de l'Institut Aerotechnique de l'Université de Paris. Études sur les Surfaces, la Résistance de l'Air, le Vent, &c. Fascicule II. Paris: H. Dunod and E. Pinat, 47-49, Quai des Grands-Augustins. Price 6 frs.

Report for the Year 1912. The National Physical Laboratory, Bushy House, Teddington.

National Physical Laboratory. Collected Researches. Vols. IX and X, 1913. The National Physical Laboratory, Bushy House, Teddington.

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